



St. Paul Park Refining Co. LLC
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April 28, 2019

Air Quality Tracking Coordinator
Compliance Determination Unit
Air Quality Division
Minnesota Pollution Control Agency
520 Lafayette Road North
St. Paul, Minnesota 55155-4194



**RE: First Quarter 2019 Excess Emission and CEM Report
St. Paul Park Refining Co. LLC
AQD Facility ID No: 16300003
AQD File No: 0203 (AI ID 447)**

Dear Sir/Madam:

St. Paul Park Refining Co. LLC hereby provides the Minnesota Pollution Control Agency (MPCA) with the enclosed Excess Emission and Continuous Emissions Monitor (CEM) Downtime Report for 1st quarter 2019.

On October 1, 2018, Andeavor completed a merger transaction with Marathon Petroleum Corporation. As such, Andeavor is now a subsidiary of Marathon Petroleum Corporation. All of Andeavor's subsidiaries continue as subsidiaries of Andeavor and thus also subsidiaries of Marathon Petroleum Corporation. In addition, as part of the merger transaction Andeavor is now known as Andeavor LLC. These merger-related transactions involve only Andeavor LLC, and there have been no changes to the Andeavor subsidiaries or to the Andeavor Logistics, LP subsidiaries (including Western Refining Logistics, LP) or its operations. St. Paul Park Refining Co. LLC remains the owner and operator of the refinery. Western Refining Logistics, LP is and will remain the owner and operator of pipeline, gathering, terminalling transportation and storage assets, and thus we are providing this notice as a courtesy.

Please contact me at (651) 769-6766 if you have any questions or if you need additional information.

Respectfully,

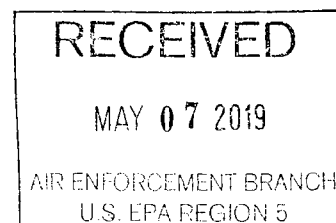
Scott Conant
Advanced HES Professional
St. Paul Park Refining Co. LLC

Enclosures

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**First Quarter 2019
Excess Emission and CEM Report**



St. Paul Park Refining Co. LLC

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Cylinder Gas Audits/Internal Calibration Error Tests Conducted. All CGAs passed

January 17, 2019	EQUI16	#2 SRU (O ₂)/ (SO ₂)
January 28, 2019	EQUI4	#2 Crude 2-B-3 (O ₂)/ (NO _x)
January 28, 2019	EQUI14	HDH 32-B-1 (NO _x)/ (O ₂)
March 21, 2019	EQUI2	FCC Opacity

Relative Accuracy Test Audits (RATA).

February 18, 2019	EQUI42	Boiler #7 (O2)/ (NOx)/ (CO)
February 19, 2019	EQUI43	Boiler #8 (O2)/ (NOx)/ (CO)
March 5, 2019	EQUI2	FCC Regenerator (O2/CO2/NOx/CO/SO2
March 6, 2019	EQUI33	#3 SRU (O2)/ (SO2)
March 7, 2019	EQUI44	Heater 8-B-1(NOx)/ (O2)
March 19, 2019	EQUI28	VRU (TOC as Propane)
March 19, 2019	TREA13	#1 Flare (SO2)
March 19, 2019	COMG7	Fuel Gas Balance Drum (H2S)
March 20, 2019	TREA13	#1 Flare (H2S)
March 20, 2019	EQUI328	WWTP Thermal Oxidizer (H2S)


Section 1
Report Certification

Certification for 1st Quarter 2019 CEM Excess Emission and CEM Downtime Report

This section of the report serves as the St. Paul Park Refining Co. LLC and Western Refining Terminals LLC's written certification of the information contained within this report. This certification is comprehensive of the entire report and replaces the need for certification of each of the Excess Emissions and CEM Reporting Forms.

St. Paul Park Refining Co. LLC & Western Refining Terminal LLC

Based on the information and belief formed after reasonable inquiry, the statements and information in this report are true, accurate, and complete.



Tommy Chavez, Vice-President & Refinery Manager

4-29-2019
Date

Section 2

Report Summary

Excess Emissions Summary First Quarter 2019

Excess Emissions Summary

Incident A – Flare H₂S Exceedance due to Frozen Pressure Transmitter

Starting on January 24, 2019, ambient temperature were drop below zero. At approximately 3:25pm on 01/26/2019 the impulse line to a pressure transmitter in unit 29 had frozen causing the transmitter to read low compared to actual pressure. This caused a control valve in unit 29 to slowly close in response to the false low pressure reading. Pressure began to rise in the stripper tower until the pressure safety valve in the 29 unit began to open and relieve to the flare at approximately 4:00pm. H₂S concentration rose in the flare and the flare H₂S scavenger injection rate was increased to 100% but the limit had already been exceeded. A field operator identified the source and took corrective action. The pressure safety valve quit relieving and operators began to thaw the pressure transmitter in unit 29 and insulation was installed.

The flare H₂S 162 ppm/3-hr limit was exceeded for 5 hours. There was no exceedance of the applicable flare vent gas work practice standard or 500 lbs SO₂/24-hr reportable quantity.

Periods Over 162 ppm H₂S, 3-hour Avg.	Date and Time	Measured 3- Hour Avg. (ppm H₂S)
1	1/26/19 16:00	609
2	1/26/19 17:00	900
3	1/26/19 18:00	1167
4	1/26/19 19:00	635
5	1/26/19 20:00	339

Incident B – Flare H₂S Exceedance due to Freeze up Issues

At approximately 6:20 on 01/29/2019 operations started trouble-shooting elevated H₂S to the flare. The source of the H₂S was not found via the Refinery Flare Troubleshooting Procedure. At 6:44pm the flare H₂S scavenger injection rate was increased to 100%. At 9:20pm an operator found that the scavenger pumps were frozen and weren't pumping. An operator began attempts to thaw the pumps. At 11:49pm, the flare H₂S 162 ppm H₂S 3-hour rolling average limit was exceeded.

At around 2:00am on 01/30/2019, pressure transmitter in unit 29 began to read low again due to possible freeze up. A control valve in unit 29 began to slowly close again and at 2:30am the pressure relief device in unit 29 relieved to the flare. At 2:45am, an operator heard the pressure safety valve in unit 29 relieving and took corrective action. The pressure safety valve quit relieving. The operator began attempting to thaw the pressure transmitter in unit 29 and restored indication at approximately 9:00am. Operations did not expect the transmitter to freeze again due to preventive measures already taken to insulate the line. The line will be heat traced under the insulation to prevent freezing in the future.

Additionally, to prevent freezing in the future, a work flow process will be developed to ensure work requests are being entered throughout the year for winterization prior to a cold snap.

The flare H₂S 162 ppm/3-hr limit was exceeded for 23 hours. There was no exceedance of the applicable flare vent gas work practice standard or 500 lbs SO₂/24-hr reportable quantity.

Periods Over 162 ppm H₂S, 3-hour Avg.	Date and Time	Measured 3- Hour Avg. (ppm H₂S)
1	1/29/19 23:00	170
2	1/29/19 00:00	227
3	1/29/19 01:00	234
4	1/29/19 02:00	517
5	1/29/19 03:00	1065
6	1/29/19 04:00	1054
7	1/29/19 05:00	726
8	1/30/19 09:00	246
9	1/30/19 10:00	399
10	1/30/19 11:00	504
11	1/30/19 12:00	582
12	1/30/19 13:00	595
13	1/30/19 14:00	605
14	1/30/19 15:00	547
15	1/30/19 16:00	476
16	1/30/19 17:00	389
17	1/30/19 18:00	298
18	1/30/19 19:00	212

Incident C – Flare H₂S Exceedance due to Tailgas Compressor Trip

On 2/3/19, at approximately 06:04 AM, the Crude Tail Gas (TG) compressor tripped on suction drum 2-F-10 high level. The crude TG compressor trip resulted in an exceedance of the flare 162ppm H₂S 3-hr rolling average and the 500 lbs SO₂/day RQ. Upon investigation, it was identified that contaminated solvent was introduced to the front end of the SDA unit, which resulted in unstable levels that caused carry over of asphaltenes from the asphaltene flash drum into the solvent surge drum. The carryover of asphaltene caused high pressure, which was vented to the solvent surge drum to the crude TG compressor. The high pressure in the solvent surge drum was caused by an accumulation of liquid solvent rather than non-condensable gases. Liquid solvent was vented to the crude TG compressor suction drum thus causing the high-level trip.

Field Operations responded to the crude TG Compressor suction drum high level trip. Operations removed liquid level from suction drum, cleaned the crude TG Compressor, and changed filters. The SDA Unit was shut down until the source of problem could be identified and corrected. The crude TG Compressor restarted to normal operations.

The SDA procedure will be updated to include a step for SDA solvent quality control verification prior to filling the solvent surge drum.

The flare H₂S 162 ppm/3-hr limit was exceeded for 6 hours. The 500 lbs SO₂/24-hr reportable quantity was exceeded. A total of 820 lbs/24-hr of SO₂ was released.

Periods Over 162 ppm H₂S, 3-hour Avg.	Date and Time	Measured 3-Hour Avg. (ppm H₂S)
1	2/3/19 06:00	439
2	2/3/19 07:00	1253
3	2/3/19 08:00	2044
4	2/3/19 09:00	2037
5	2/3/19 10:00	1266
6	2/3/19 11:00	471

Incident D – FCC flue gas CO > 500 ppm/1-hr A

On February 26, 2019, while cutting rate due to a high level in the FCC main column, the unit experienced a one-hour CO exceedance 576 ppm, with the limit being 500 ppm.

While increasing rate on the FCC, the main column overhead accumulator level increased past the level of the level indication. When this happened, operations cut the FCC rate. During the rate reduction, the O₂ levels increased causing operations to decrease Air/O₂ flows to the regenerator. The air flow reduction was greater than was needed to correct the upset condition. A rate cut reduction corrective action table will be provided to avoid CO excursions.

Since measured CO data points are not verifiable or accurate when 50% greater than the high calibration gas concentration, a value of 1327.35 ppm (1.5 times the daily span calibration gas concentration of 884.9 ppm CO) was substituted for all greater data points. The recalculated and verifiable value is provided in the last column of the table. SPPRC believes these periods to be exempt under SSM provisions NSPS J of the regulations and is providing the data for informational purposes only.

For compliance with MACT CC FCC 500 ppm/1-hr avg. CO limit, since these exceedances occurred during hot-standby/start-up of the FCC and oxygen was maintained for 43 of 44 hours, only one exceedance of the limit occurred.

Periods Over 500 ppm CO @ 0% O₂ 1-hour Avg.	Date and End Time	Measured 1-Hour Avg. (ppm CO)	Verified 1-hour Avg. (ppm CO)	% O₂
1	2/26/19, 16:00	576	341	>1%

SARA Reportable Release Summary

A total of 820 lbs/24-hr of SO₂ was released during the Flare H₂S Exceedance due to crude Tailgas Compressor Trip on 2/26/2019. See Incident C summary for additional details.

SBC/BWON Vent Gas System

During the 1st quarter 2019, BWON vent gasses were bypassed around the WWTP TO and associated temperature monitor 20.4% percent of the time or 439.2 hours.

The primary reason the Thermal Oxidizer has been tripped is to avoid a safety concern due to O₂ being present in the vent gas line. Backwashing of the filters was recently routed to the DGF Overflow Pit and API Pump Pit due to plugging Dual Media Filters caused by recycling solids. Air/O₂ from the filter backwash sequence disengages in the DGF Overflow Pit and API Pump Pit resulting in vent gases that contain O₂ enroute to an ignition source (Thermal Oxidizer). Sweep

gases are manually being tripped to the atmosphere during a backwash to prevent the possibility of an explosion. The recycling solids issue is not an ongoing problem but can occur. Both short term and long-term options are being evaluated to re-route backwash water or addition of a vessel to reduce O₂ in the backwash water.

Monitor Bypass Summary

There were no monitor bypasses during the 1st quarter 2019.

SRU Bypass Summary

There were no SRU bypasses during the 1st quarter 2019 that resulted in an exceedance of an SO₂ emission limit.

Section 3

Excess Emissions and CEM Reporting Forms

Appendix A

Quarterly CGA Results

1st Quarter 2019 - Percent Excess Emissions and CEM Downtime Summary

Source Description	Excess Emission Percent Time Exceeded This Quarter (1)	Continuous Monitor Downtime Percent This Quarter (2,3)
Refinery Fuel Gas Drum (H2S ppmv, 3-hr rolling ave)	0.00%	0.28%
Refinery Fuel Gas Drum (H2S ppmv, 365-day rolling ave)	0.00%	0.28%
Heater 28-B-1 (lb SO2/mmbtu, 3 hr average)	0.00%	---
Heater 28-B-1 (lb SO2/hr, 3 hr average)	0.00%	---
Heater 28-B-1 fuel gas flow meter	---	0.00%
FCC Opacity (30%, 6-min average)	0.00%	0.51%
FCC Opacity (20%, 3-hr average)	0.00%	0.51%
FCC CO (ppm)	0.05%	0.14%
FCC NOx (ppm - 365 day rolling average)	0.00%	0.14%
FCC NOx (ppm - 7 day rolling average)	0.00%	0.14%
FCC SO2 (ppm - 7 day rolling average)	0.00%	0.14%
FCC SO2 (ppm - 365 day rolling average)	0.00%	0.14%
FCC SO2 (lb/hr)	0.00%	0.14%
FCC SOx (lb/1000 lb coke burn)	0.00%	0.14%
Heater 5-B-1 (lbs SO2/hr, 3-hr rolling ave)	0.00%	---
Heater 5-B-1 (lbs SO2/mmbtu, 3-hr rolling ave)	0.00%	---
Heater 5-B-1 fuel gas flow meter	---	0.19%
Heater 2-B-3 (lbs SO2/hr, 3-hr rolling ave)	0.00%	0.00%
Heater 2-B-3 (lbs SO2/mmbtu, 3-hr rolling ave)	0.00%	---
Heater 2-B-3 (lbs NOx/mmbtu, 3-hr rolling ave)	0.00%	0.05%
Heater 2-B-3 (lbs NOx/mmbtu, 12-Month rolling ave)	0.00%	0.05%
Heater 2-B-3 NSP fuel gas flow meter	---	0.00%
Heater 2-B-3 Fuel Gas flow meter	---	0.00%
Heater 2-B-3 NOX/O2 CEM	---	0.05%
Heater 1-B-5 (lbs SO2/hr, 3-hr rolling ave)	0.00%	---
Heater 1-B-5 (lbs SO2/mmbtu, 3-hr rolling ave)	0.00%	---
Heater 1-B-5 fuel gas flow meter	---	0.05%
Heater 1-B-7 (lbs SO2/hr, 3-hr rolling ave)	0.00%	---
Heater 1-B-7 (lbs SO2/mmbtu, 3-hr rolling ave)	0.00%	---
Heater 1-B-7 fuel gas flow meter	---	0.00%
Heater 29-B-1/29-B-2 (lbs SO2/hr, 3-hr rolling ave)	0.00%	---
Heater 29-B-1/29-B-2 (lbs SO2/mmbtu, 3-hr rolling ave)	0.00%	---
Heater 29-B-1/29-B-2 fuel gas flow meter	---	0.09%
Heater 3-B-1/2/3 (lbs SO2/hr, 3-hr rolling ave)	0.00%	---
Heater 3-B-1/2/3 (lbs SO2/mmbtu, 3-hr rolling ave)	0.00%	---
Heater 3-B-1/2/3 fuel gas flow meter	---	0.00%
Heater 3-B-4 (lbs SO2/hr, 3-hr rolling ave)	0.00%	---
Heater 3-B-4 (lbs SO2/mmbtu, 3-hr rolling ave)	0.00%	---
Heater 3-B-4 fuel gas flow meter	---	0.00%
Heater 3-B-7 (lbs SO2/hr, 3-hr rolling ave)	0.00%	---
Heater 3-B-7 (lbs SO2/mmbtu, 3-hr rolling ave)	0.00%	---
Heater 3-B-7 fuel gas flow meter	---	0.00%
Heater 3-B-8 (lbs SO2/hr, 3-hr rolling ave)	0.00%	---
Heater 3-B-8 (lbs SO2/mmbtu, 3-hr rolling ave)	0.00%	---
Heater 3-B-8 fuel gas flow meter	---	0.00%
Heater 34-B-1 (lbs SO2/hr, 3-hr rolling ave)	0.00%	---
Heater 34-B-1 (lbs SO2/mmbtu, 3-hr rolling ave)	0.00%	---
Heater 34-B-1 fuel gas flow meter	---	0.05%
Heater 34-B-2 (lbs SO2/hr, 3-hr rolling ave)	0.00%	---
Heater 34-B-2 (lbs SO2/mmbtu, 3-hr rolling ave)	0.00%	---
Heater 34-B-2 fuel gas flow meter	---	0.09%
Heater 34-B-2 fuel gas flow meter	---	0.00%
Heater 32-B-1 (lbs SO2/hr, 3-hr rolling ave)	0.00%	---
Heater 32-B-1 (lbs SO2/mmbtu, 3-hr rolling ave)	0.00%	---
Heater 32-B-1 fuel gas flow meter	---	0.05%
Heater 32-B-1 (NOx lb/mmbtu, 365 day rolling ave)	0.00%	0.05%
Heater 10-B-1 (lbs SO2/hr, 3-hr rolling ave)	0.00%	---
Heater 10-B-1 (lbs SO2/mmbtu, 3-hr rolling ave)	0.00%	---
Heater 10-B-1 fuel gas flow meter	---	0.00%

1st Quarter 2019 - Percent Excess Emissions and CEM Downtime Summary

Source Description	Excess Emission Percent Time Exceeded This Quarter (1)	Continuous Monitor Downtime Percent This Quarter (2,3)
#2 SRU/SCOT SO2/O2 (ppmv, 12-hr ave)	0.00%	1.34%
#2 SRU/SCOT SO2/O2 (lbs/hr, 1-hr ave)	0.00%	1.34%
#2 SRU/SCOT SO2/O2 (lbs/hr, 3-hr rolling ave)	0.00%	1.34%
#2 SRU/SCOT bypasses	0.00%	---
Heater 36-B-1 (lbs SO2/hr, 3-hr rolling ave)	0.00%	---
Heater 36-B-1 (lbs SO2/MMBtu, 3-hr rolling ave)	0.00%	---
Heater 36-B-1 fuel gas flow meter	---	0.00%
Heater 36-B-2, 3, and 4 (lbs SO2/hr, 3-hr rolling ave)	0.00%	---
Heater 36-B-2, 3, and 4 (lbs SO2/MMBtu, 3-hr rolling ave)	0.00%	---
Heater 36-B-2, 3, and 4 fuel gas flow meter	---	0.00%
Heater 36-B-6E (lbs SO2/hr, 3-hr rolling ave)	0.00%	---
Heater 36-B-6E (lbs SO2/MMBtu, 3-hr rolling ave)	0.00%	---
Heater 36-B-6E fuel gas flow meter	---	0.05%
Heater 36-B-6W (lbs SO2/hr, 3-hr rolling ave)	0.00%	---
Heater 36-B-6W (lbs SO2/MMBtu, 3-hr rolling ave)	0.00%	---
Heater 36-B-6W fuel gas flow meter	---	0.10%
Heater 37-B-1 (lbs SO2/hr, 3-hr rolling ave)	0.00%	---
Heater 37-B-1 (lbs SO2/MMBtu, 3-hr rolling ave)	0.00%	---
Heater 37-B-1 fuel gas flow meter	---	0.05%
Heater 37-B-2 (lbs SO2/hr, 3-hr rolling ave)	0.00%	---
Heater 37-B-2 (lbs SO2/MMBtu, 3-hr rolling ave)	0.00%	---
Heater 37-B-2 fuel gas flow meter	---	0.00%
Heaters 38-B-1, 38-B-2 (lb SO2/hr, 3-hr rolling ave)	0.00%	---
Heaters 38-B-1, 38-B-2 (lb SO2/MMBtu, 3-hr rolling ave)	0.00%	---
Heaters 38-B-1, 38-B-2 NSP Gas flow meter	---	0.00%
Heaters 38-B-1, 38-B-2 PSA fuel gas flow meter	---	0.00%
Light oil loadrack VRU (TOC ppmv, 6-hr average)	0.00%	0.42%
Light oil loadrack- Permanent VCU (Limit = Temp ≥215 deg F, 3-hr rolling ave)	0.00%	0.00%
Refinery flare (presence of pilots)	---	0.00%
Refinery flare - SARA Reportable emissions - SO2	1.06%	1.39%
Refinery flare - SARA Reportable emissions - NOx	0.00%	---
Refinery flare - H2S (3-hour rolling average)	1.34%	2.13%
Temporary flare (presence of pilots)	0.00%	0.00%
Temporary flare - SARA Reportable emissions - SO2	0.00%	0.00%
Temporary flare - SARA Reportable emissions - NOx	0.00%	0.00%
Temporary flare - H2S (3-hour rolling average)	0.00%	0.00%
W.W.T.P. SBC Offgas (H2S ppmv, 365-day rolling ave)	0.00%	0.35%
W.W.T.P. Thermal Oxidizer, SBC Offgas (Temp Deg. F, 3-hr rolling ave)	0.00%	0.00%
W.W.T.P. Thermal Oxidizer, NESHAP Offgas (Temp Deg. F, 3-hr rolling ave)	0.00%	0.00%
#3 SRU/SCOT SO2/O2 (ppmv, 12-hr ave)	0.00%	0.00%
#3 SRU/SCOT SO2/O2 (lbs/hr, 1-hr ave)	0.00%	0.00%
#3 SRU/SCOT SO2/O2 (lbs/hr, 3-hr rolling ave)	0.00%	0.00%
#3 SRU/SCOT Bypasses	0.00%	---
NP VEPR Phase 1 - Catalytic AB w/Heat Exchg (Temp, 3-hr rolling ave)	0.00%	0.00%
NP VEPR Phase 2 - Catalytic AB w/Heat Exchg (Temp, 3-hr rolling ave)	0.00%	0.00%
Boiler 7 NOx (lb/MMBtu, 30 day rolling ave)	0.00%	0.00%
Boiler 7 SO2 (lb/MMBtu, 3-hr rolling ave)	0.00%	---
Boiler 7 fuel gas flow meter	---	0.00%
Boiler 8 NOx (lb/MMBtu, 30 day rolling ave)	0.00%	0.00%
Boiler 8 SO2 (lb/MMBtu, 3-hr rolling ave)	0.00%	---
Boiler 8 fuel gas flow meter	---	0.00%
Heater 8-B-1 (lb SO2/MMBtu, 3-hr average)	0.00%	---
Heater 8-B-1 (lb SO2/hr, 3-hr average)	0.00%	---
Heater 8-B-1 (ppmvd, 30-day average)	0.00%	0.42%
Heater 8-B-1 fuel gas flow meter	---	0.00%
GP 032 CO (TPY, Combined 12-month Rolling Sum)	0.00%	---
Boiler 7 CO (TPY, Combined 12-month Rolling Sum w/ Boiler 8)	---	0.00%
Boiler 8 CO (TPY, Combined 12-month Rolling Sum w/ Boiler 7)	---	0.00%
GP 032 NOx (TPY, Combined 12-month Rolling Sum)	0.00%	---
Boiler 7 NOx (TPY, Combined 12-month Rolling Sum w/ Boiler 8)	---	0.00%
Boiler 8 NOx (TPY, Combined 12-month Rolling Sum w/ Boiler 7)	---	0.00%
Notes:		
(1) 0.00% indicates No Excess Emissions.		
(2) Monitor Downtime includes daily calibration checks for opacity.		
(3) 0.00% indicates No Monitor Downtime.		

MINNESOTA POLLUTION CONTROL AGENCY

AQD FILE #: #0203 (AI ID 447)

EXCESS EMISSION AND CEM REPORTING FORM

POLLUTANT (circle one): SO₂ NO_x CO CO₂ O₂ TRS **H₂S** HCL Opacity
 Other: _____

REPORTING QUARTER: First, 2019 MONITOR
 MODEL: Vista 2020 GC

FACILITY: St. Paul Park Refining Co. LLC MFR: Combustion Engineering

EMISSION SUBJECT ITEM: COMG7 EMISSION LIMITS AND AVERAGING TIME:
 162 ppm H₂S - 3 hr rolling average
 60 ppm H₂S - 365 day rolling average

EMISSION UNIT(S): Refinery fuel gas system EMISSION BASIS: 40 CFR 60
 NSPS Subpart Ja

ASSOCIATED ITEMS: EQUI1, EQUI3, EQUI4, EQUI5, EQUI6, EQUI7, EQUI8,
 EQUI9, EQUI10, EQUI11, EQUI12, EQUI13, EQUI14, EQUI15, EQUI17, EQUI18,
 EQUI19, EQUI20, EQUI21, EQUI26, , EQUI326, EQUI23, EQUI24, EQUI33, EQUI42, EQUI43, and EQUI44.

NOTE: H₂S limits within 40 CFR 60 Subp. Ja only apply to EQUI42, EQUI43, and EQUI44.

TOTAL OPERATING HOURS
 OF EMISSION UNIT: 2160

A. EMISSION DATA SUMMARY			B. CEM PERFORMANCE SUMMARY	
1 DURATION OF EXCESS EMISSIONS (HRS)	3-hour	365-day	1 DURATION OF CEM DOWNTIME DURING SOURCE OPERATION (HRS)	
a) Startup/Shutdown	<u>0.00</u>	<u>0.00</u>	a) Monitor malfunction	<u>0.00</u>
b) Control equipment	<u>0.00</u>	<u>0.00</u>	b) Non-monitor malfunction	<u>0.00</u>
c) Process problems	<u>0.00</u>	<u>0.00</u>	c) QA calibration	<u>0.00</u>
d) Other known causes	<u>0.00</u>	<u>0.00</u>	d) Other known causes	<u>6.00</u>
e) Unknown causes	<u>0.00</u>	<u>0.00</u>	e) Unknown causes	<u>0.00</u>
f) Soot blowing	<u>0.00</u>	<u>0.00</u>		
g) Fuel problems	<u>0.00</u>	<u>0.00</u>	2 TOTAL DURATION (HRS)	<u>6.00</u>
2 TOTAL DURATION (HRS)	<u>0.00</u>	<u>0.00</u>	3 PERCENT OF TOTAL	
3 PERCENT OF TOTAL EXCESS EMISSIONS	<u>0.00%</u>	<u>0.00%</u>	CEM DOWNTIME	<u>0.28%</u>

FOR OPACITY, RECORD ALL TIMES IN MINUTES. FOR GASES, RECORD ALL TIMES IN HOURS.

% Total Excess Emissions = Total Duration of Excess Emissions / (Total Operating Time - CEM Downtime)

% Total CEM Downtime = CEM Downtime / Total Operating Time

NOTES: _____

If no exceedances: I certify that the required analyses were made, that I am familiar with the results, and that to the best of my knowledge there were no exceedances during the reporting period. I certify that I am familiar with the information in this report and that to the best of my knowledge the information is valid.

SUBMITTED BY: See certification page at front of report DATE: _____

CONTINUOUS EMISSION MONITOR EXCESS EMISSION REPORT

REPORTING QUARTER: First, 2019

AQD FILE #: #0203 (AI ID 447)

EMISSION UNIT(S): Refinery fuel gas system

POLLUTANT MONITORED: H2S

DATE/TIME	TOTAL DURATION (HRS)	MAX. CONC. (ppm, 3-hr average)	CAUSE/CORRECTIVE ACTION
a) Startup/Shutdown			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
b) Control equipment			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
c) Process problems			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
d) Other known causes			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
e) Unknown causes			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
f) Soot blowing			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
g) Fuel problems			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		

CONTINUOUS EMISSION MONITOR EXCESS EMISSION REPORT

REPORTING QUARTER: First, 2019

AQD FILE #: #0203 (AI ID 447)

EMISSION UNIT(S): Refinery fuel gas system

POLLUTANT MONITORED: H2S

DATE/TIME	TOTAL DURATION (HRS)	MAX. CONC. (ppm, 365-day average)	CAUSE/CORRECTIVE ACTION
a) Startup/Shutdown			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
b) Control equipment			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
c) Process problems			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
d) Other known causes			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
e) Unknown causes			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
f) Soot blowing			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
g) Fuel problems			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		

CONTINUOUS EMISSION MONITOR DOWNTIME REPORT

REPORTING QUARTER: First, 2019

EMISSION UNIT(S): Refinery fuel gas system

POLLUTANT MONITORED: H2S

AQD FILE #: #0203 (AI ID 447)

DATE/TIME	TOTAL DURATION (HRS)	CAUSE/CORRECTIVE ACTION
a) Monitor malfunction		
Total	0.00	
b) Non-monitor malfunction		
Total	0.00	
c) QA calibration		
1/1/2019 0:00		
4/1/2019 0:00		
Total	0.00	
d) Other known causes		
2/19/2019 9:00		
2/19/2019 10:00	1.00	Alarm of validation; Slider replaced, valve ports cleaned
3/7/2019 14:00		
3/7/2019 15:00	1.00	Loss of signal due to controls work
3/22/2019 16:00		
3/22/2019 20:00	4.00	Communications error
Total	6.00	
e) Unknown causes		
Total	0.00	

MINNESOTA POLLUTION CONTROL AGENCY

AQD FILE #: #0203 (AI ID 447)

EXCESS EMISSION AND CEM REPORTING FORM

POLLUTANT (circle one): SO₂ NO_x CO CO₂ O₂ TRS H₂S HCL Opacity

Other: Flow

REPORTING QUARTER: First, 2019

MONITOR

MODEL: Fuel Gas Flow Rate/FG H₂S CEM

MFR: _____

FACILITY: St. Paul Park Refining Co. LLC

EMISSION SUBJECT ITEM: EQUI1

EMISSION LIMIT AND AVERAGE TIME:

1.44 lb SO₂/hr - 3 hour rolling avg.

1.75 lb SO₂/mmbtu - 3 hour rolling avg.

EMISSION UNIT(S): Alkylation
Heater 28-B-1

EMISSION BASIS: SIP for SO₂ NAAQS

ASSOCIATED ITEMS: COMG7, EQUI163, EQUI173, STRU47, COMG20

NOTE: There was zero fuel oil runtime during the quarter.

OPERATING HOURS OF EMISSION UNIT:

2160

A. EMISSION DATA SUMMARY			B. CEM Performance Summary	
DURATION OF EXCESS EMISSIONS (HRS)			1 DURATION OF CEM DOWNTIME DURING SOURCE OPERATION (HRS)	
1	lb/hr	lb/mmbtu		Fuel Gas
a) Startup/Shutdown	0.00	0.00	a) Monitor malfunction	0.00
b) Control equipment	0.00	0.00	b) Non-monitor malfunction	0.00
c) Process problems	0.00	0.00	c) QA calibration	0.00
d) Other known causes	0.00	0.00	d) Other known causes	0.00
e) Unknown causes	0.00	0.00	e) Unknown causes	0.00
f) Soot blowing	0.00	0.00		
g) Fuel problems	0.00	0.00		
2 TOTAL DURATION (HRS)	0.00	0.00	2 TOTAL DURATION (HRS)	0.00
3 PERCENT OF TOTAL EXCESS EMISSIONS	0.00%		3 PERCENT OF TOTAL CEM DOWNTIME	0.00%

FOR OPACITY, RECORD ALL TIMES IN MINUTES. FOR GASES, RECORD ALL TIMES IN HOURS.

% Total Excess Emissions = $\frac{\text{Total Duration of Excess Emissions}}{\text{Total Operating Time} - \text{CEM Downtime}}$

% Total CEM Downtime = $\frac{\text{CEM Downtime}}{\text{Total Operating Time}}$

NOTES: _____

If no exceedances: I certify that the required analyses were made, that I am familiar with the results, and that to the best of my knowledge there were no exceedances during the reporting period. I certify that I am familiar with the information in this report and that to the best of my knowledge the information is valid.

SUBMITTED BY: See certification page at front of report DATE: _____

EXCESS EMISSION REPORT

REPORTING QUARTER: First, 2019 AQD FILE #: #0203 (AI ID 447)
EMISSION UNIT(S): EQUI1
POLLUTANT MONITORED: SO2 lb/hr

DATE/TIME	TOTAL DURATION (HRS)	MAX. EMISSIONS RATE	CAUSE/CORRECTIVE ACTION
a) Startup/Shutdown			
1/1/2019			
4/1/2019			No excess emissions.
Total	0.00		
b) Control equipment			
1/1/2019			
4/1/2019			No excess emissions.
Total	0.00		
c) Process problems			
1/1/2019			
4/1/2019			No excess emissions.
Total	0.00		
d) Other known causes			
1/1/2019			
4/1/2019			No excess emissions.
Total	0.00		
e) Unknown causes			
1/1/2019			
4/1/2019			No excess emissions.
Total	0.00		
f) Soot blowing			
1/1/2019			
4/1/2019			No excess emissions.
Total	0.00		
g) Fuel problems			
1/1/2019			
4/1/2019			No excess emissions.
Total	0.00		

EXCESS EMISSION REPORT

REPORTING QUARTER: First, 2019 AQD FILE #: #0203 (AI ID 447)

EMISSION UNIT(S): EQUI1

POLLUTANT MONITORED: SO2 lb/mmbtu

DATE/TIME	TOTAL DURATION (HRS)	MAX. EMISSIONS RATE	CAUSE/CORRECTIVE ACTION
a) Startup/Shutdown			
1/1/2019			
4/1/2019			No excess emissions.
Total	0.00		
b) Control equipment			
1/1/2019			
4/1/2019			No excess emissions.
Total	0.00		
c) Process problems			
1/1/2019			
4/1/2019			No excess emissions.
Total	0.00		
d) Other known causes			
1/1/2019			
4/1/2019			No excess emissions.
Total	0.00		
e) Unknown causes			
1/1/2019			
4/1/2019			No excess emissions.
Total	0.00		
f) Soot blowing			
1/1/2019			
4/1/2019			No excess emissions.
Total	0.00		
g) Fuel problems			
1/1/2019			
4/1/2019			No excess emissions.
Total	0.00		

CONTINUOUS EMISSION MONITOR DOWNTIME REPORT

REPORTING QUARTER: First, 2019 AQR FILE #: #0203 (AI ID 447)

EMISSION UNIT(S): Heater 28-B-1 (EQUI1)

POLLUTANT MONITORED: Fuel Gas Flow Rate

DATE/TIME	TOTAL DURATION (HRS)	CAUSE/CORRECTIVE ACTION
a) Monitor malfunction		
Total	<u>0.00</u>	
b) Non-monitor malfunction		
Total	<u>0.00</u>	
c) QA calibration		
Total	<u>0.00</u>	
d) Other known causes		
Total	<u>0.00</u>	
e) Unknown causes		
Total	<u>0.00</u>	

MINNESOTA POLLUTION CONTROL AGENCY

AQD FILE #: #0203 (AI ID 447)

EXCESS EMISSION AND CEM REPORTING FORM

POLLUTANT (circle one): SO2 SOX NOx CO CO2 O2 TRS H2S HCL Opacity

Other: Metal HAP per MACT Subpart UUU

REPORTING QUARTER: First, 2019 MONITOR MODEL: 440

FACILITY: St. Paul Park Refining Co. LLC MFR: Thermo Electron Corporation

EMISSION SUBJECT ITEM: EQUI2 EMISSION LIMITS AND AVERAGING TIME: 30% opacity; except for one six minute period in any one hour (1) 20% opacity/3-hr Avg.

EMISSION UNIT(S): FCC regenerator EMISSION BASIS: MN Rule 7011.1405, subp. 1, Item B 40 CFR 63.1564

ASSOCIATED ITEMS: EQUI164, TREA17

PROCESS UNIT DESCRIPTION: EQUI2 is approximately a 30,500 bpd fluidized catalytic cracking unit. The materials from the FCC are routed to the FCC column for fractionation.

TOTAL OPERATING HOURS OF EMISSION UNIT: 2160

A. EMISSION DATA SUMMARY				B. CEM PERFORMANCE SUMMARY			
1 DURATION OF EXCESS EMISSIONS (6-MIN, 30% Limit)		1 DURATION OF EXCESS EMISSIONS (3-HR, 20% Limit)		1 DURATION OF CEM DOWNTIME DURING SOURCE OPERATION (MIN)			
a) Startup/Shutdown	0.00	a) Startup/Shutdown	0.00	a) Monitor malfunction	0.00		
b) Control equipment	0.00	b) Control equipment	0.00	b) Non-monitor malfunction	0.00		
c) Process problems	0.00	c) Process problems	0.00	c) QA calibration	660.00		
d) Other known causes	0.00	d) Other known causes	0.00	d) Other known causes	0.00		
e) Unknown causes	0.00	e) Unknown causes	0.00	e) Unknown causes	0.00		
f) Soot blowing	0.00	f) Soot blowing	0.00				
g) Fuel problems	0.00	g) Fuel problems	0.00				
2 TOTAL DURATION (MIN)	0.00	2 TOTAL DURATION (HR)	0.00	2 TOTAL DURATION (MIN)	660.00		
3 PERCENT OF TOTAL EXCESS EMISSIONS	0.00%	3 PERCENT OF TOTAL EXCESS EMISSIONS	0.00%	3 PERCENT OF TOTAL CEM DOWNTIME	0.51%		

FOR OPACITY, RECORD ALL TIMES IN MINUTES. FOR GASES, RECORD ALL TIMES IN HOURS.

% Total Excess Emissions = Total Duration of Excess Emissions / (Total Operating Time - CEM Downtime)

% Total CEM Downtime = CEM Downtime / Total Operating Time

NO: (1) According to MN Rules 7011.1405, Subpt. 1, B and MACT II, an exceedance of this standard occurs whenever any one-hour period contains two or more 6-minute periods during which the average opacity exceeds 30%. As allowed in the above noted regulation, if two or more 6-minute average is exceeded in any one hour, it is reported in the summary at the front of this report.

If no exceedances: I certify that the required analyses were made, that I am familiar with the results, and that to the best of my knowledge there were no exceedances during the reporting period. I certify that I am familiar with the information in this report and that to the best of my knowledge the information is valid.

SUBMITTED BY: See certification page at front of report DATE: _____

CONTINUOUS EMISSION MONITOR EXCESS EMISSION REPORT

REPORTING QUARTER: First, 2019 AQD FILE #: #0203 (AI ID 447)

EMISSION UNIT(S): FCC regenerator

POLLUTANT MONITORED: Opacity (20% 3-hr Limit)

DATE/TIME	TOTAL DURATION (HR)	MAX. OPACITY (%)	CAUSE/CORRECTIVE ACTION
a) Startup/Shutdown			
1/1/2019			
4/1/2019			
total	0		No excess emissions.
b) Control equipment			
1/1/2019			
4/1/2019			
total	0		No excess emissions.
c) Process problems			
1/1/2019			
4/1/2019			
total	0		No excess emissions.
d) Other known causes			
1/1/19 0:00			
4/1/19 0:00	0		No excess emissions
total	0		
e) Unknown causes			
1/1/2019			
4/1/2019			
total	0		No excess emissions.
f) Soot blowing			
1/1/2019			
4/1/2019			
total	0		No excess emissions.
g) Fuel problems			
1/1/2019			
4/1/2019			
total	0		No excess emissions.

CONTINUOUS EMISSION MONITOR EXCESS EMISSION REPORT

REPORTING QUARTER: First, 2019 AQD FILE #: #0203 (AI ID 447)
 EMISSION UNIT(S): FCC regenerator
 POLLUTANT MONITORED: Opacity

DATE/TIME	TOTAL DURATION (MIN)	MAX. OPACITY (%)	CAUSE/CORRECTIVE ACTION
		# of 6 min	Max Opacity (%)
a) Startup/Shutdown			
1/1/2019			
4/1/2019			
total	0	0	No excess emissions.
b) Control equipment			
1/1/2019			
4/1/2019			
total	0	0	No excess emissions.
c) Process problems			
1/1/2019			
4/1/2019			
total	0	0	No excess emissions.
d) Other known causes			
1/1/19 0:00			
4/1/19 0:00	0	0.0	No excess emissions.
total	0		
e) Unknown causes			
1/1/2019			
4/1/2019			
total	0	0	No excess emissions.
f) Soot blowing			
1/1/2019			
4/1/2019			
total	0	0	No excess emissions.
g) Fuel problems			
1/1/2019			
4/1/2019			
total	0	0	No excess emissions.

CONTINUOUS EMISSION MONITOR DOWNTIME REPORT

REPORTING QUARTER: First, 2019 AOD FILE #: #0203 (AI ID 447)

EMISSION UNIT(S): FCC regenerator

POLLUTANT MONITORED: Opacity

DATE/TIME	TOTAL DURATION (MIN)	CAUSE/CORRECTIVE ACTION
a) Monitor malfunction		
1/1/2019 0:00		
4/1/2019 0:00		
Total	0.00	
b) Non-monitor malfunction		
1/1/2019		
4/1/2019		
Total	0.00	
c) QA calibration		
1/1/19 0:00		
4/1/19 0:00	546	Daily calibrations
3/21/19 13:12		
3/21/19 14:00	48	Quarterly audit, troubleshoot erratic readings
3/21/2019 14:00		
3/21/2019 15:06	66	Complete quarterly audit
Total	660.00	
d) Other known causes		
1/1/2019 0:00		
4/1/2019 0:00		
Total	0.00	
e) Unknown causes		
1/1/2019 0:00		
4/1/2019 0:00		
Total	0.00	

MINNESOTA POLLUTION CONTROL AGENCY

AQD FILE #: #0203 (AI ID 447)

EXCESS EMISSION AND CEM REPORTING FORM

POLLUTANT (circle one): SO₂ SO_x NO_x **CO** CO₂ O₂ TRS H₂S HCL Opacity

Other: Organic HAP per MACT Subpart UUU MONITOR

REPORTING QUARTER: First, 2019 MODEL: Advance Optima (Uras 14) Gas Analyzer

FACILITY: St. Paul Park Refining Co. LLC MFR: ABB

EMISSION SUBJECT ITEM: EQUI2 EMISSION LIMIT AND AVERAGE TIME: 500 ppmvd - 1 hour average

EMISSION UNIT(S): FCC regenerator EMISSION BASIS: NSPS Subpart J - 40 CFR 60.103(a)

ASSOCIATED ITEMS: EQUI164, TREA17 40 CFR 63.1565(a)(1)(ii)

PROCESS UNIT DESCRIPTION: EQUI2 is a fluidized catalytic cracking unit.
The materials from the FCC are routed to the FCC column for fractionation.

TOTAL OPERATING HOURS

OF EMISSION UNIT: 2160

A. EMISSION DATA SUMMARY		B. CEM PERFORMANCE SUMMARY	
1 DURATION OF EXCESS EMISSIONS (HRS)		1 DURATION OF CEM DOWNTIME DURING SOURCE OPERATION (HRS)	
a) Startup/Shutdown	0.00	a) Monitor malfunction	0.00
b) Control equipment	0.00	b) Non-monitor malfunction	0.00
c) Process problems	1.00	c) QA calibration	0.00
d) Other known causes	0.00	d) Other known causes	3.00
e) Unknown causes	0.00	e) Unknown causes	0.00
f) Soot blowing	0.00		
g) Fuel problems	0.00		
2 TOTAL DURATION (HRS)	1.00	2 TOTAL DURATION (HRS)	3.00
3 PERCENT OF TOTAL EXCESS EMISSIONS	0.05%	3 PERCENT OF TOTAL CEM DOWNTIME	0.14%

FOR OPACITY, RECORD ALL TIMES IN MINUTES. FOR GASES, RECORD ALL TIMES IN HOURS.

% Total Excess Emissions = $\frac{\text{Total Duration of Excess Emissions}}{\text{Total Operating Time} - \text{CEM Downtime}}$

% Total CEM Downtime = $\frac{\text{CEM Downtime}}{\text{Total Operating Time}}$

NOTES: Actual monitored values are noted in this section.

During excess emission events, a value equal to 1.5 times the high calibration gas concentration is used to replace any analyzer readings over that value since measured data points are not verifiable or accurate when at least 50% greater than the high calibration gas concentration. See Excess Emissions Summary for greater detail.

If no exceedances: I certify that the required analyses were made, that I am familiar with the results, and that to the best of my knowledge there were no exceedances during the reporting period. I certify that I am familiar with the information in this report and that to the best of my knowledge the information is valid.

SUBMITTED BY: See certification page at front of report DATE: _____

CONTINUOUS EMISSION MONITOR EXCESS EMISSION REPORT

REPORTING QUARTER: First, 2019 AQD FILE #: #0203 (AI ID 447)

EMISSION UNIT(S): FCC regenerator

POLLUTANT MONITORED: CO and O2

DATE/TIME	TOTAL DURATION (HRS)	MAX. CONCENTRATION (ppm), hourly average		CAUSE/CORRECTIVE ACTION
		Actual	Recalc	
a) Startup/Shutdown				
1/1/2019 0:00				
4/1/2019 0:00	0.00	No excess emissioins		
Total	0.00			
b) Control equipment				
1/1/2019				
4/1/2019	0.00	No excess emissions.		
Total	0.00			
c) Process problems				
2/26/2019 1500				
2/26/2019 1600	1.00	576	343	Please see Incident summary C for details.
Total	1.00			
d) Other known causes				
1/1/2019				
4/1/2019	0.00	No excess emissions.		
Total	0.00			
e) Unknown causes				
1/1/2019				
4/1/2019	0.00	No excess emissions.		
Total	0.00			
f) Soot blowing				
1/1/2019				
4/1/2019	0.00	No excess emissions.		
Total	0.00			
g) Fuel problems				
1/1/2019				
4/1/2019	0.00	No excess emissions.		
Total	0.00			

CONTINUOUS EMISSION MONITOR DOWNTIME REPORT

REPORTING QUARTER: First, 2019 AQD FILE #: #0203 (AI ID 447)
 EMISSION UNIT(S): FCC regenerator
 POLLUTANT MONITORED: CO and O2

DATE/TIME	TOTAL DURATION (HRS)	CAUSE/CORRECTIVE ACTION
a) Monitor malfunction		
Total	<u>0.00</u>	
b) Non-monitor malfunction		
Total	<u>0.00</u>	
c) QA calibration		
Total	<u>0.00</u> 0.00	
d) Other known causes		
3/27/2019 14:00		
3/27/2019 16:00	2.00	Preventative maintenance
3/27/2019 17:00		
3/27/2019 18:00	1.00	Sample shut off due to pump issue; tubing fixed
Total	<u>3.00</u>	
e) Unknown causes		
Total	<u>0.00</u>	

MINNESOTA POLLUTION CONTROL AGENCY

AQD FILE #: #0203 (AI ID 447)

EXCESS EMISSION AND CEM REPORTING FORM

POLLUTANT (circle one): SO₂ SOX **NO_x** CO CO₂ **O₂** TRS H₂S HCL Opacity

Other: _____

REPORTING QUARTER: First, 2019

MONITOR

MODEL: Advance Optima (Uras UV) Gas Analyzer

FACILITY: St. Paul Park Refining Co. LLC

MFR: ABB

EMISSION SUBJECT ITEM: EQUI2

EMISSION LIMIT AND AVERAGE TIME:

90 ppmvd, O₂ free - 7 day rolling average

70 ppmvd, O₂ free - 365 day rolling average

EMISSION UNIT(S): FCC regenerator

EMISSION BASIS:

Consent Decree Effective 4/3/06

ASSOCIATED ITEMS: EQUI164, TREA17

PROCESS UNIT DESCRIPTION: EQUI2 is a fluidized catalytic cracking unit.
The materials from the FCC are routed to the FCC column for fractionation.

TOTAL OPERATING HOURS
OF EMISSION UNIT: 2160

A. EMISSION DATA SUMMARY			B. CEM PERFORMANCE SUMMARY	
1 DURATION OF EXCESS EMISSIONS (HRS)	7 Day	365 Day	1 DURATION OF CEM DOWNTIME DURING SOURCE OPERATION (HRS)	
a) Startup/Shutdown	0.00	0.00	a) Monitor malfunction	0.00
b) Control equipment	0.00	0.00	b) Non-monitor malfunction	0.00
c) Process problems	0.00	0.00	c) QA calibration	0.00
d) Other known causes	0.00	0.00	d) Other known causes	3.00
e) Unknown causes	0.00	0.00	e) Unknown causes	0.00
f) Soot blowing	0.00	0.00		
g) Fuel problems	0.00	0.00		
2 TOTAL DURATION (HRS)	0.00	0.00	2 TOTAL DURATION (HRS)	3.00
3 PERCENT OF TOTAL EXCESS EMISSIONS	0.00%	0.00%	3 PERCENT OF TOTAL CEM DOWNTIME	0.14%

FOR OPACITY, RECORD ALL TIMES IN MINUTES. FOR GASES, RECORD ALL TIMES IN HOURS.

% Total Excess Emissions = $\frac{\text{Total Duration of Excess Emissions}}{\text{Total Operating Time} - \text{CEM Downtime}}$

% Total CEM Downtime = $\frac{\text{CEM Downtime}}{\text{Total Operating Time}}$

NOTE:

CEM downtime is the same downtime reported on the form for EQUI2 for CO ppm

If no exceedances: I certify that the required analyses were made, that I am familiar with the results, and that to the best of my knowledge there were no exceedances during the reporting period. I certify that I am familiar with the information in this report and that to the best of my knowledge the information is valid.

SUBMITTED BY: See certification page at front of report

DATE: _____

CONTINUOUS EMISSION MONITOR EXCESS EMISSION REPORT

REPORTING QUARTER: First, 2019 AQD FILE #: #0203 (AI ID 447)

EMISSION UNIT(S): FCC regenerator

POLLUTANT MONITORED: NOx and O2

DATE/TIME	TOTAL DURATION (HRS)	MAX. CONCENTRATION (ppm), 7-day rolling avg	CAUSE/CORRECTIVE ACTION
a) Startup/Shutdown			
a) Startup/Shutdown			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
b) Control equipment			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
c) Process problems			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
d) Other known causes			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
e) Unknown causes			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
f) Soot blowing			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
g) Fuel problems			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		

CONTINUOUS EMISSION MONITOR EXCESS EMISSION REPORT

REPORTING QUARTER: First, 2019 AQD FILE #: #0203 (AI ID 447)

EMISSION UNIT(S): FCC regenerator

POLLUTANT MONITORED: NOx and O2

DATE/TIME	TOTAL DURATION (HRS)	MAX. CONCENTRATION (ppm), 365-day rolling avg	CAUSE/CORRECTIVE ACTION
a) Startup/Shutdown			
a) Startup/Shutdown			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
b) Control equipment			
b) Control equipment			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
c) Process problems			
c) Process problems			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
d) Other known causes			
d) Other known causes			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
e) Unknown causes			
e) Unknown causes			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
f) Soot blowing			
f) Soot blowing			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
g) Fuel problems			
g) Fuel problems			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		

CONTINUOUS EMISSION MONITOR DOWNTIME REPORT

REPORTING QUARTER: First, 2019 AQD FILE #: #0203 (AI ID 447)
 EMISSION UNIT(S): FCC regenerator
 POLLUTANT MONITORED: NOx and O2

DATE/TIME	TOTAL DURATION (HRS)	CAUSE/CORRECTIVE ACTION
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a) Monitor malfunction

Total	0.00	See FCC CO CEM downtime.
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b) Non-monitor malfunction

Total	0.00	See FCC CO CEM downtime.
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c) QA calibration

Total	0.00	See FCC CO CEM downtime.
-------	------	--------------------------

d) Other known causes

Total	3.00	See FCC CO CEM downtime.
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e) Unknown causes

Total	0.00	See FCC CO CEM downtime.
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MINNESOTA POLLUTION CONTROL AGENCY

AQD FILE #: #0203 (AI ID 447)

EXCESS EMISSION AND CEM REPORTING FORM

POLLUTANT (circle one): SO2 SOX NOx CO CO2 O2 TRS H2S HCL Opacity

Other: _____

REPORTING QUARTER: First, 2019

MONITOR
MODEL: Advance Optima (Limas UV) Gas Analyzer

FACILITY:
St. Paul Park Refining Co. LLC

MFR: ABB

EMISSION SUBJECT ITEM: EQUI2

EMISSION LIMIT AND AVERAGE TIME:
100 ppmvd, O2 free - 7 day rolling average
50 ppmvd, O2 free - 365 day rolling average

EMISSION UNIT(S): FCC regenerator

EMISSION BASIS:
Consent Decree Effective 6/30/06

ASSOCIATED ITEMS: EQUI164, TREA17

PROCESS UNIT DESCRIPTION: EQUI2 is a fluidized catalytic cracking unit.
The materials from the FCC are routed to the FCC column for fractionation.

TOTAL OPERATING HOURS
OF EMISSION UNIT: 2160

A. EMISSION DATA SUMMARY			B. CEM PERFORMANCE SUMMARY	
1 DURATION OF EXCESS EMISSIONS (HRS)	7 Day	365 Day	1 DURATION OF CEM DOWNTIME DURING SOURCE OPERATION (HRS)	
a) Startup/Shutdown	0.00	0.00	a) Monitor malfunction	0.00
b) Control equipment	0.00	0.00	b) Non-monitor malfunction	0.00
c) Process problems	0.00	0.00	c) QA calibration	0.00
d) Other known causes	0.00	0.00	d) Other known causes	3.00
e) Unknown causes	0.00	0.00	e) Unknown causes	0.00
f) Soot blowing	0.00	0.00		
g) Fuel problems	0.00	0.00		
2 TOTAL DURATION (HRS)	0.00	0.00	2 TOTAL DURATION (HRS)	3.00
3 PERCENT OF TOTAL EXCESS EMISSIONS	0.00%	0.00%	3 PERCENT OF TOTAL CEM DOWNTIME	0.14%

FOR OPACITY, RECORD ALL TIMES IN MINUTES. FOR GASES, RECORD ALL TIMES IN HOURS.

% Total Excess Emissions = Total Duration of Excess Emissions / (Total Operating Time - CEM Downtime)

% Total CEM Downtime = CEM Downtime / Total Operating Time

NOTE:

CEM downtime is the same downtime reported on the form for EQUI2 for CO ppm

If no exceedances: I certify that the required analyses were made, that I am familiar with the results, and that to the best of my knowledge there were no exceedances

SUBMITTED BY: See certification page at front of report DATE: _____

CONTINUOUS EMISSION MONITOR EXCESS EMISSION REPORT

REPORTING QUARTER: First, 2019 AQD FILE #: #0203 (AI ID 447)

EMISSION UNIT(S): FCC regenerator

POLLUTANT MONITORED: SO2 ppmvd, O2 free

DATE/TIME	TOTAL DURATION (days)	MAX. CONCENTRATION (ppm), 7-day average	CAUSE/CORRECTIVE ACTION
a) Startup/Shutdown			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
b) Control equipment			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
c) Process problems			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
d) Other known causes			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
e) Unknown causes			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
f) Soot blowing			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
g) Fuel problems			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		

CONTINUOUS EMISSION MONITOR EXCESS EMISSION REPORT

REPORTING QUARTER: First, 2019 AQD FILE #: #0203 (AI ID 447)

EMISSION UNIT(S): FCC regenerator

POLLUTANT MONITORED: SO2 ppmvd, O2 free

DATE/TIME	TOTAL DURATION (HRS)	MAX. CONCENTRATION (ppm), 365-day average	CAUSE/CORRECTIVE ACTION
a) Startup/Shutdown			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
b) Control equipment			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
c) Process problems			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
d) Other known causes			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
e) Unknown causes			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
f) Soot blowing			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
g) Fuel problems			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		

CONTINUOUS EMISSION MONITOR DOWNTIME REPORT

REPORTING QUARTER: First, 2019 AQD FILE #: #0203 (AI ID 447)
 EMISSION UNIT(S): FCC regenerator
 POLLUTANT MONITORED: SO2 ppmvd, O2 free

DATE/TIME	TOTAL DURATION (HRS)	CAUSE/CORRECTIVE ACTION
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NOTE:
 CEM downtime is the same downtime reported on the form for EQUI2 for CO ppm

a) Monitor malfunction

Total	0.00	See FCC CO CEM downtime.
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b) Non-monitor malfunction

Total	0.00	See FCC CO CEM downtime.
-------	------	--------------------------

c) QA calibration

Total	0.00	See FCC CO CEM downtime.
-------	------	--------------------------

d) Other known causes

Total	3.00	See FCC CO CEM downtime.
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e) Unknown causes

Total	0.00	See FCC CO CEM downtime.
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MINNESOTA POLLUTION CONTROL AGENCY

AQD FILE #: #0203 (AI ID 447)

EXCESS EMISSION AND CEM REPORTING FORM

POLLUTANT (circle one): SO2 SOX NOx CO CO2 O2 TRS H2S HCL Opacity

Other: _____

REPORTING QUARTER: First, 2019

MONITOR

MODEL: Advance Optima (Limas UV) Gas Analyzer

FACILITY: St. Paul Park Refining Co. LLC

MFR: ABB

EMISSION SUBJECT ITEM: EQUI2

EMISSION LIMIT AND AVERAGE TIME:
793.65 lbs/hr - 3 hour rolling average

EMISSION UNIT(S): FCC regenerator

EMISSION BASIS: SIP for SO2 NAAQS

ASSOCIATED ITEMS: EQUI164, TREA17

PROCESS UNIT DESCRIPTION: EQUI2 is a fluidized catalytic cracking unit.
The materials from the FCC are routed to the FCC column for fractionation.

TOTAL OPERATING HOURS
OF EMISSION UNIT: 2160

A. EMISSION DATA SUMMARY		B. CEM PERFORMANCE SUMMARY	
1 DURATION OF EXCESS EMISSIONS (HRS)		1 DURATION OF CEM DOWNTIME DURING SOURCE OPERATION (HRS)	
a) Startup/Shutdown	<u>0.00</u>	a) Monitor malfunction	<u>0.00</u>
b) Control equipment	<u>0.00</u>	b) Non-monitor malfunction	<u>0.00</u>
c) Process problems	<u>0.00</u>	c) QA calibration	<u>0.00</u>
d) Other known causes	<u>0.00</u>	d) Other known causes	<u>3.00</u>
e) Unknown causes	<u>0.00</u>	e) Unknown causes	<u>0.00</u>
f) Soot blowing	<u>0.00</u>		
g) Fuel problems	<u>0.00</u>		
2 TOTAL DURATION (HRS)	<u>0.00</u>	2 TOTAL DURATION (HRS)	<u>3.00</u>
3 PERCENT OF TOTAL EXCESS EMISSIONS	<u>0.00%</u>	3 PERCENT OF TOTAL CEM DOWNTIME	<u>0.14%</u>

FOR OPACITY, RECORD ALL TIMES IN MINUTES. FOR GASES, RECORD ALL TIMES IN HOURS.

% Total Excess Emissions = $\frac{\text{Total Duration of Excess Emissions}}{\text{Total Operating Time} - \text{CEM Downtime}}$

% Total CEM Downtime = $\frac{\text{CEM Downtime}}{\text{Total Operating Time}}$

NOTE:

CEM downtime is the same downtime reported on the form for EQUI2 for CO ppm

If no exceedances: I certify that the required analyses were made, that I am familiar with the results, and that to the best of my knowledge there were no exceedances during the reporting period. I certify that I am familiar with the information in this report and that to the best of my knowledge the information is valid.

SUBMITTED BY: See certification page at front of report

DATE: _____

CONTINUOUS EMISSION MONITOR EXCESS EMISSION REPORT

REPORTING QUARTER: First, 2019 AQD FILE #: #0203 (AI ID 447)
 EMISSION UNIT(S): FCC regenerator
 POLLUTANT MONITORED: S02

DATE/TIME	TOTAL DURATION (HRS)	MAX. CONCENTRATION (lbs/hr)	CAUSE/CORRECTIVE ACTION
a) Startup/Shutdown			
1/1/2019			
4/1/2019			
Total	0.00		
b) Control equipment			
1/1/2019			
4/1/2019			
Total	0.00		
c) Process problems			
1/1/2019			
4/1/2019			
Total	0.00		
d) Other known causes			
1/1/2019			
4/1/2019			
Total	0.00		
e) Unknown causes			
1/1/2019			
4/1/2019			
Total	0.00		
f) Soot blowing			
1/1/2019			
4/1/2019			
Total	0.00		
g) Fuel problems			
1/1/2019			
4/1/2019			
Total	0.00		

CONTINUOUS EMISSION MONITOR DOWNTIME REPORT

REPORTING QUARTER: First, 2019 AQD FILE #: #0203 (AI ID 447)
 EMISSION UNIT(S): FCC regenerator
 POLLUTANT MONITORED: SO2

DATE/TIME	TOTAL DURATION (HRS)	CAUSE/CORRECTIVE ACTION
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NOTE:
 CEM downtime is the same downtime reported on the form for EQUI2 for CO ppm

a) Monitor malfunction

Total	<u>0.00</u>	See FCC SO2 ppm CEM downtime.
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b) Non-monitor malfunction

Total	<u>0.00</u>	See FCC SO2 ppm CEM downtime.
-------	-------------	-------------------------------

c) QA calibration

Total	<u>0.00</u>	See FCC SO2 ppm CEM downtime.
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d) Other known causes

Total	<u>3.00</u>	See FCC SO2 ppm CEM downtime.
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e) Unknown causes

Total	<u>0.00</u>	See FCC SO2 ppm CEM downtime.
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MINNESOTA POLLUTION CONTROL AGENCY

AQD FILE #: #0203 (AI ID 447)

EXCESS EMISSION AND CEM REPORTING FORM

POLLUTANT (circle one): SO₂ **SO_x** NO_x CO CO₂ **O₂** TRS H₂S HCL Opacity

Other: _____

REPORTING QUARTER: First, 2019

MONITOR

MODEL: Advance Optima (Limas UV) Gas Analyzer

FACILITY: St. Paul Park Refining Co. LLC

MFR: ABB

EMISSION SUBJECT ITEM: EQUI2

EMISSION LIMIT AND AVERAGE TIME:

9.8 lb SO_x/1000 lb coke burn - 7 day rolling avg

EMISSION UNIT(S): FCC regenerator

EMISSION BASIS:

Consent Decree, Appendix I, and

NSPS 60.104(b)(2), 60.104(c)

ASSOCIATED ITEMS: EQUI164, TREA17

PROCESS UNIT DESCRIPTION:

EQUI2 is a fluidized catalytic cracking unit.

The materials from the FCC are routed to the FCC column for fractionation.

TOTAL OPERATING HOURS
OF EMISSION UNIT:

2160

A. EMISSION DATA SUMMARY

1 DURATION OF EXCESS EMISSIONS (HRS)

a) Startup/Shutdown	0.00
b) Control equipment	0.00
c) Process problems	0.00
d) Other known causes	0.00
e) Unknown causes	0.00
f) Soot blowing	0.00
g) Fuel problems	0.00
2 TOTAL DURATION (HRS)	0.00
3 PERCENT OF TOTAL EXCESS EMISSIONS	0.00%

B. CEM PERFORMANCE SUMMARY

1 DURATION OF CEM DOWNTIME DURING
SOURCE OPERATION (HRS)

a) Monitor malfunction	0.00
b) Non-monitor malfunction	0.00
c) QA calibration	0.00
d) Other known causes	3.00
e) Unknown causes	0.00
2 TOTAL DURATION (HRS)	3.00
3 PERCENT OF TOTAL CEM DOWNTIME	0.14%

FOR OPACITY, RECORD ALL TIMES IN MINUTES. FOR GASES, RECORD ALL TIMES IN HOURS.

% Total Excess Emissions =

Total Duration of Excess Emissions / (Total Operating Time - CEM Downtime)

% Total CEM Downtime =

CEM Downtime / Total Operating Time

NOTE:

CEM downtime is the same downtime reported on the form for EQUI2 for CO ppm

If no exceedances: I certify that the required analyses were made, that I am familiar with the results, and that to the best of my knowledge there were no exceedances during the reporting period. I certify that I am familiar with the information in this report and that to the best of my knowledge the information is valid.

SUBMITTED BY: See certification page at front of report

DATE: _____

CONTINUOUS EMISSION MONITOR EXCESS EMISSION REPORT

REPORTING QUARTER: First, 2019 AQD FILE #: #0203 (AI ID 447)
 EMISSION UNIT(S): FCC regenerator
 POLLUTANT MONITORED: Lb SOX

DATE/TIME	TOTAL DURATION (HRS)	MAX. CONCENTRATION (lb Sox/ton), hourly average	CAUSE/CORRECTIVE ACTION
a) Startup/Shutdown			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
b) Control equipment			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
c) Process problems			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
d) Other known causes			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
e) Unknown causes			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
f) Soot blowing			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
g) Fuel problems			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		

CONTINUOUS EMISSION MONITOR DOWNTIME REPORT

REPORTING QUARTER: First, 2019 AQD FILE #: #0203 (AI ID 447)

EMISSION UNIT(S): FCC regenerator

POLLUTANT MONITORED: Lb SOX

DATE/TIME	TOTAL DURATION (HRS)	CAUSE/CORRECTIVE ACTION
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NOTE:

CEM downtime is the same downtime reported on the form for EQUI2 for CO ppm

a) Monitor malfunction

Total	<u>0.00</u>	See FCC NOx or CO CEM downtime.
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b) Non-monitor malfunction

Total	<u>0.00</u>	See FCC Nox or CO CEM downtime.
-------	-------------	---------------------------------

c) QA calibration

Total	<u>0.00</u>	See FCC NOx or CO CEM downtime.
-------	-------------	---------------------------------

d) Other known causes

Total	<u>3.00</u>	See FCC Nox or CO CEM downtime.
-------	-------------	---------------------------------

e) Unknown causes

Total	<u>0.00</u>	See FCC NOx or CO CEM downtime.
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MINNESOTA POLLUTION CONTROL AGENCY

AQD FILE # #0203 (AI ID 447)

EXCESS EMISSION AND CEM REPORTING FORM

POLLUTANT (circle one): SO₂ NO_x CO CO₂ O₂ TRS H₂S HCL Opacity

Other:

Flow

REPORTING QUARTER: First, 2019

MONITOR

MODEL: Fuel Gas Flow Rate/FG H₂S CEM

FACILITY:

St. Paul Park Refining Co. LLC

MFR: _____

EMISSION SUBJECT ITEM:

EQUI3

EMISSION LIMITS AND AVERAGING TIME:

2.62 lb SO₂/hr - 3 hour rolling avg.

1.75 lb SO₂/mmBtu - 3 hour rolling avg.

EMISSION UNIT(S):

No. 2 Crude Vacuum Heater

EMISSION BASIS:

SIP for SO₂ NAAQS

5-B-1

ASSOCIATED ITEMS:

COMG7, COMG20, EQUI163, EQUI175, EQUI206, STRU70, COMG20

TOTAL OPERATING HOURS Total

OF EMISSION UNIT: 2160

A. EMISSION DATA SUMMARY

1 DURATION OF EXCESS EMISSIONS (HRS)

lb/hr

lb/mmBtu

a) Startup/Shutdown

0.00

0.00

b) Control equipment

0.00

0.00

c) Process problems

0.00

0.00

d) Other known causes

0.00

0.00

e) Unknown causes

0.00

0.00

f) Soot blowing

0.00

0.00

g) Fuel problems

0.00

0.00

2 TOTAL DURATION (HRS)

0.00

0.00

3 PERCENT OF TOTAL

EXCESS EMISSIONS

0.00%

0.00%

B. CEM PERFORMANCE SUMMARY

1 DURATION OF CEM DOWNTIME DURING

SOURCE OPERATION (HRS)

Fuel Gas

a) Monitor malfunction

0.00

b) Non-monitor malfunction

0.00

c) QA calibration

0.00

d) Other known causes

4.00

e) Unknown causes

0.00

2 TOTAL DURATION (HRS)

4.00

3 PERCENT OF TOTAL

CEM DOWNTIME

0.19%

FOR OPACITY, RECORD ALL TIMES IN MINUTES. FOR GASES, RECORD ALL TIMES IN HOURS.

% Total Excess Emissions =

Total Duration of Excess Emissions / (Total Operating Time - CEM Downtime)

% Total CEM Downtime =

CEM Downtime / Total Operating Time

NOTES:

If no exceedances: I certify that the required analyses were made, that I am familiar with the results, and that to the best of my knowledge there were no exceedances during the reporting period. I certify that I am familiar with the information in this report and that to the best of my knowledge the information is valid.

SUBMITTED BY:

See certification page at front of report

DATE:

CONTINUOUS EMISSION MONITOR EXCESS EMISSION REPORT

REPORTING QUARTER: First, 2019 AQD FILE #: #0203 (AI ID 447)
 EMISSION UNIT(S): 5-B-1
 POLLUTANT MONITORED: SO2 lb/hr - 3 hour rolling average

DATE/TIME	TOTAL DURATION (HRS)	MAX. EMISSIONS RATE	CAUSE/CORRECTIVE ACTION
a) Startup/Shutdown			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
b) Control equipment			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
c) Process problems			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
d) Other known causes			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
e) Unknown causes			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
f) Soot blowing			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
g) Fuel problems			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		

CONTINUOUS EMISSION MONITOR EXCESS EMISSION REPORT

REPORTING QUARTER: First, 2019 AQD FILE #: #0203 (AI ID 447)
 EMISSION UNIT(S): 5-B-1
 POLLUTANT MONITORED: SO2 lb/mmBtu - 3 hour rolling average

DATE/TIME	TOTAL DURATION (HRS)	MAX. EMISSIONS RATE	CAUSE/CORRECTIVE ACTION
a) Startup/Shutdown			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
b) Control equipment			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
c) Process problems			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
d) Other known causes			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
e) Unknown causes			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
f) Soot blowing			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
g) Fuel problems			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		

CONTINUOUS EMISSION MONITOR DOWNTIME REPORT

REPORTING QUARTER: First, 2019 AQR FILE #: #0203 (AI ID 447)

EMISSION UNIT(S): 5-B-1, fuel gas flow meter

POLLUTANT MONITORED: S02

DATE/TIME	TOTAL DURATION (HRS)	CAUSE/CORRECTIVE ACTION
a) Monitor malfunction		
Total	<u>0.00</u>	
b) Non-monitor malfunction		
Total	<u>0.00</u>	
c) QA calibration		
Total	<u>0.00</u>	
d) Other known causes		
	<u>2/8/2019 6:00</u>	
	<u>2/8/2019 10:00</u>	<u>4.00</u> Communications error
Total	<u>4.00</u>	
e) Unknown causes		
Total	<u>0.00</u>	

MINNESOTA POLLUTION CONTROL AGENCY

AQD FILE #: #0203 (AI ID 447)

EXCESS EMISSION AND CEM REPORTING FORM

POLLUTANT (circle one): SO₂ **NO_x** CO CO₂ **O₂** TRS H₂S HCL Opacity

Other: _____

REPORTING QUARTER: First, 2019

MONITOR

MODEL: Advance Optima Limas 11

MFR: ABB

FACILITY:

St. Paul Park Refining Co. LLC

EMISSION LIMIT AND AVERAGE TIME:

0.05 lbs/mmBtu - 12 month rolling average

0.14 lbs/mmBtu - 3 hour rolling average

EMISSION SUBJECT ITEM: EQUI4

EMISSION BASIS:

BACT PSD, 40CFR 52.21, Minn. R. 7007.3000

EMISSION UNIT(S): Heater 2-B-3

ASSOCIATED ITEMS: COMG7, EQUI163, EQUI176, EQUI296, STRU15

TOTAL OPERATING HOURS

OF EMISSION UNIT: 2160

A. EMISSION DATA SUMMARY			B. CEM PERFORMANCE SUMMARY	
1 DURATION OF EXCESS EMISSIONS (HRS)			1 DURATION OF CEM DOWNTIME DURING SOURCE OPERATION (HRS)	
	12 mo	3 hr		
a) Startup/Shutdown	<u>0.00</u>	<u>0.00</u>	a) Monitor malfunction	<u>0.00</u>
b) Control equipment	<u>0.00</u>	<u>0.00</u>	b) Non-monitor malfunction	<u>0.00</u>
c) Process problems	<u>0.00</u>	<u>0.00</u>	c) QA calibration	<u>0.00</u>
d) Other known causes	<u>0.00</u>	<u>0.00</u>	d) Other known causes	<u>1.00</u>
e) Unknown causes	<u>0.00</u>	<u>0.00</u>	e) Unknown causes	<u>0.00</u>
f) Soot blowing	<u>0.00</u>	<u>0.00</u>		
g) Fuel problems	<u>0.00</u>	<u>0.00</u>		
2 TOTAL DURATION (HRS)	<u>0.00</u>	<u>0.00</u>	2 TOTAL DURATION (HRS)	<u>1.00</u>
3 PERCENT OF TOTAL EXCESS EMISSIONS	<u>0.00%</u>	<u>0.00%</u>	3 PERCENT OF TOTAL CEM DOWNTIME	<u>0.05%</u>
FOR OPACITY, RECORD ALL TIMES IN MINUTES. FOR GASES, RECORD ALL TIMES IN HOURS.				

% Total Excess Emissions =

Total Duration of Excess Emissions / (Total Operating Time - CEM Downtime)

% Total CEM Downtime =

CEM Downtime / Total Operating Time

NOTES:

If no exceedances: I certify that the required analyses were made, that I am familiar with the results, and that to the best of my knowledge there were no exceedances during the reporting period. I certify that I am familiar with the information in this report and that to the best of my knowledge the information is valid.

SUBMITTED BY: See certification page at front of report

DATE: _____

CONTINUOUS EMISSION MONITOR EXCESS EMISSION REPORT

REPORTING QUARTER: First, 2019 AQD FILE #: #0203 (AI ID 447)

EMISSION UNIT(S): Heater 2-B-3

POLLUTANT MONITORED: NOx lb/MMBtu (12 month rolling avg) and O2

DATE/TIME	DURATION	CONCENTRATION	CAUSE/CORRECTIVE ACTION
a) Startup/Shutdown			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
b) Control equipment			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
c) Process problems			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
d) Other known causes			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
e) Unknown causes			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
f) Soot blowing			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
g) Fuel problems			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		

CONTINUOUS EMISSION MONITOR EXCESS EMISSION REPORT

REPORTING QUARTER: First, 2019 AQD FILE #: #0203 (AI ID 447)

EMISSION UNIT(S): Heater 2-B-3

POLLUTANT MONITORED: NOx lb/mmbtu (3 hr rolling avg) and O2

DATE/TIME	TOTAL DURATION (HRS)	MAX. CONCENTRATION (lbs/mmbtu)	CAUSE/CORRECTIVE ACTION
a) Startup/Shutdown			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
b) Control equipment			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
c) Process problems			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
d) Other known causes			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
e) Unknown causes			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
f) Soot blowing			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
g) Fuel problems			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		

CONTINUOUS EMISSION MONITOR DOWNTIME REPORT

REPORTING QUARTER: First, 2019 AQD FILE #: #0203 (AI ID 447)

EMISSION UNIT(S): Heater 2-B-3

POLLUTANT MONITORED: NOx and O2

DATE/TIME	TOTAL	CAUSE/CORRECTIVE ACTION
a) Monitor malfunction		
	<u>0.00</u>	
Total	0.00	
b) Non-monitor malfunction		
	<u>0.00</u>	
Total	0.00	
c) QA calibration		
	<u>0.00</u>	
	0.00	
d) Other known causes		
3/20/2019 10:00		
3/20/2019 11:00	<u>1.00</u>	Preventative maintenance
	1.00	
e) Unknown causes		
Total	0.00	

MINNESOTA POLLUTION CONTROL AGENCY

AQD FILE # #0203 (AI ID 447)

EXCESS EMISSION AND CEM REPORTING FORM

POLLUTANT (circle one): SO₂ NO_x CO CO₂ O₂ TRS H₂S HCL Opacity

Other:

Flow

REPORTING QUARTER: First, 2019

MONITOR

MODEL: Fuel Gas Flow Rate/FG H₂S CEM

FACILITY: St. Paul Park Refining Co. LLC

MFR: _____

EMISSION SUBJECT ITEM: EQUI4

EMISSION LIMITS AND AVERAGING TIME:

4.16 lb SO₂/hr - 3 hour rolling average

1.75 lb SO₂/mmbtu - 3 hour rolling avg.

EMISSION UNIT(S): No. 2 Crude Charge Heater
2-B-3

EMISSION BASIS: SIP for SO₂ NAAQS

ASSOCIATED ITEMS: COMG7, EQUI163, EQUI176, EQUI296, STRU15

OPERATING HOURS OF EMISSION UNIT:

Total	Fuel Gas	Natural Gas
2160	2160	2160

A. EMISSION DATA SUMMARY			B. CEM PERFORMANCE SUMMARY		
1 DURATION OF EXCESS EMISSIONS (HRS)			1 DURATION OF CEM DOWNTIME DURING SOURCE OPERATION (HRS)		
	lb/hr	lb/mmbtu		Fuel Gas	Natural Gas
a) Startup/Shutdown	0.00	0.00	a) Monitor malfunction	0.00	0.00
b) Control equipment	0.00	0.00	b) Non-monitor malfunction	0.00	0.00
c) Process problems	0.00	0.00	c) QA calibration	0.00	0.00
d) Other known causes	0.00	0.00	d) Other known causes	0.00	0.00
e) Unknown causes	0.00	0.00	e) Unknown causes	0.00	0.00
f) Soot blowing	0.00	0.00			
g) Fuel problems	0.00	0.00			
2 TOTAL DURATION (HRS)	0.00	0.00	2 TOTAL DURATION (HRS)	0.00	0.00
3 PERCENT OF TOTAL EXCESS EMISSIONS	0.00%	0.00%	3 PERCENT OF TOTAL CEM DOWNTIME	0.00%	0.00%

FOR OPACITY, RECORD ALL TIMES IN MINUTES. FOR GASES, RECORD ALL TIMES IN HOURS.

% Total Excess Emissions = $\frac{\text{Total Duration of Excess Emissions}}{\text{Total Operating Time} - \text{CEM Downtime}}$

% Total CEM Downtime = $\frac{\text{CEM Downtime}}{\text{Total Operating Time}}$

NOTES: _____

If no exceedances: I certify that the required analyses were made, that I am familiar with the results, and that to the best of my knowledge there were no exceedances during the reporting period. I certify that I am familiar with the information in this report and that to the best of my knowledge the information is valid.

SUBMITTED BY: See certification page at front of report

DATE: _____

CONTINUOUS EMISSION MONITOR EXCESS EMISSION REPORT

REPORTING QUARTER: First, 2019 AQD FILE #: #0203 (AI ID 447)
 EMISSION UNIT(S): 2-B-3
 POLLUTANT MONITORED: SO2 lb/hr - 3 hour rolling average

DATE/TIME	TOTAL DURATION (HRS)	MAX. EMISSIONS RATE	CAUSE/CORRECTIVE ACTION
a) Startup/Shutdown			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
b) Control equipment			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
c) Process problems			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
d) Other known causes			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
e) Unknown causes			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
f) Soot blowing			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
g) Fuel problems			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		

CONTINUOUS EMISSION MONITOR EXCESS EMISSION REPORT

REPORTING QUARTER: First, 2019

AQD FILE #: #0203 (AI ID 447)

EMISSION UNIT(S): 2-B-3

POLLUTANT MONITORED: SO2 lb/mmbtu - 3 hour rolling average

DATE/TIME	TOTAL DURATION (HRS)	MAX. EMISSIONS RATE	CAUSE/CORRECTIVE ACTION
a) Startup/Shutdown			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
b) Control equipment			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
c) Process problems			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
d) Other known causes			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
e) Unknown causes			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
f) Soot blowing			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
g) Fuel problems			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		

CONTINUOUS EMISSION MONITOR DOWNTIME REPORT

REPORTING QUARTER: First, 2019 AQD FILE #: #0203 (AI ID 447)

EMISSION UNIT(S): 2-B-3, Fuel Gas Flow Rate

POLLUTANT MONITORED: S02

DATE/TIME	TOTAL DURATION (HRS)	CAUSE/CORRECTIVE ACTION
a) Monitor malfunction		
Total	<u>0.00</u>	
b) Non-monitor malfunction		
Total	<u>0.00</u>	
c) QA calibration		
	<u>0.00</u>	
d) Other known causes		
Total	<u>0.00</u>	
e) Unknown causes		
Total	<u>0.00</u>	

CONTINUOUS EMISSION MONITOR DOWNTIME REPORT

REPORTING QUARTER: First, 2019 AQD FILE #: #0203 (AI ID 447)

EMISSION UNIT(S): 2-B-3, Natural Gas Flow Rate

POLLUTANT MONITORED: S02

DATE/TIME	TOTAL DURATION (HRS)	CAUSE/CORRECTIVE ACTION
a) Monitor malfunction		
Total	<u>0.00</u>	
b) Non-monitor malfunction		
Total	<u>0.00</u>	
c) QA calibration		
Total	<u>0.00</u>	
d) Other known causes		
Total	<u>0.00</u>	
e) Unknown causes		
Total	<u>0.00</u>	

MINNESOTA POLLUTION CONTROL AGENCY

AQD FILE #: #0203 (AI ID 447)

EXCESS EMISSION AND CEM REPORTING FORM

POLLUTANT (circle one): SO₂ NO_x CO CO₂ O₂ TRS H₂S HCL Opacity

Other:

Flow

REPORTING QUARTER: First, 2019

MONITOR

MODEL: Fuel Gas Flow Rate/FG H₂S CEM

FACILITY: St. Paul Park Refining Co. LLC

MFR: _____

EMISSION SUBJECT ITEM: EQUI5

EMISSION LIMITS AND AVERAGING TIME:

1.2 lb SO₂/hr - 3 hr rolling avg.

1.75 lb SO₂/mmbtu - 3 hour rolling avg.

EMISSION UNIT(S): No. 1 Crude Vacuum heater
1-B-5

EMISSION BASIS: SIP for SO₂ NAAQS

ASSOCIATED ITEMS: COMG7, EQUI163, EQUI178, STRU10

TOTAL OPERATING HOURS

OF EMISSION UNIT: 2160

A. EMISSION DATA SUMMARY			B. CEM PERFORMANCE SUMMARY	
1 DURATION OF EXCESS EMISSIONS (HRS)			1 DURATION OF CEM DOWNTIME DURING SOURCE OPERATION (HRS)	
	lb/hr	lb/mmbtu		
a) Startup/Shutdown	0.00	0.00	a) Monitor malfunction	0.00
b) Control equipment	0.00	0.00	b) Non-monitor malfunction	0.00
c) Process problems	0.00	0.00	c) QA calibration	0.00
d) Other known causes	0.00	0.00	d) Other known causes	1.00
e) Unknown causes	0.00	0.00	e) Unknown causes	0.00
f) Soot blowing	0.00	0.00		
g) Fuel problems	0.00	0.00		
2 TOTAL DURATION (HRS)	0.00	0.00	2 TOTAL DURATION (HRS)	1.00
3 PERCENT OF TOTAL EXCESS EMISSIONS	0.00%	0.00%	3 PERCENT OF TOTAL CEM DOWNTIME	0.05%

FOR OPACITY, RECORD ALL TIMES IN MINUTES. FOR GASES, RECORD ALL TIMES IN HOURS.

% Total Excess Emissions = $\frac{\text{Total Duration of Excess Emissions}}{\text{Total Operating Time} - \text{CEM Downtime}}$

% Total CEM Downtime = $\frac{\text{CEM Downtime}}{\text{Total Operating Time}}$

NOTES: _____

If no exceedances: I certify that the required analyses were made, that I am familiar with the results, and that to the best of my knowledge there were no exceedances during the reporting period. I certify that I am familiar with the information in this report and that to the best of my knowledge the information is valid.

SUBMITTED BY: See certification page at front of report

DATE: _____

CONTINUOUS EMISSION MONITOR EXCESS EMISSION REPORT

REPORTING QUARTER: First, 2019 AQD FILE #: #0203 (AI ID 447)
 EMISSION UNIT(S): 1-B-5
 POLLUTANT MONITORED: S02 - lb/hr

DATE/TIME	TOTAL DURATION (HRS)	MAX. CONCENTRATION (lb/hr, 3-hour avg)	CAUSE/CORRECTIVE ACTION
a) Startup/Shutdown			
1/1/2019			
4/1/2019			No excess emissions.
Total	0.00		
b) Control equipment			
1/1/2019			
4/1/2019			No excess emissions.
Total	0.00		
c) Process problems			
1/1/2019			
4/1/2019			No excess emissions.
Total	0.00		
d) Other known causes			
1/1/2019			
4/1/2019			No excess emissions.
Total	0.00		
e) Unknown causes			
1/1/2019			
4/1/2019			No excess emissions.
Total	0.00		
f) Soot blowing			
1/1/2019			
4/1/2019			No excess emissions.
Total	0.00		
g) Fuel problems			
1/1/2019			
4/1/2019			No excess emissions.
Total	0.00		

CONTINUOUS EMISSION MONITOR EXCESS EMISSION REPORT

REPORTING QUARTER: First, 2019 AQD FILE #: #0203 (AI ID 447)

EMISSION UNIT(S): 1-B-5

POLLUTANT MONITORED: S02 - lb/mmBtu

DATE/TIME	TOTAL DURATION (HRS)	MAX. CONCENTRATION (lb/mmBtu)	CAUSE/CORRECTIVE ACTION
a) Startup/Shutdown			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
b) Control equipment			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
c) Process problems			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
d) Other known causes			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
e) Unknown causes			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
f) Soot blowing			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
g) Fuel problems			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		

CONTINUOUS EMISSION MONITOR DOWNTIME REPORT

REPORTING QUARTER: First, 2019 AOD FILE #: #0203 (AI ID 447)

EMISSION UNIT(S): 1-B-5, Fuel Gas Flow Rate

POLLUTANT MONITORED: S02

DATE/TIME	TOTAL DURATION (HRS)	CAUSE/CORRECTIVE ACTION
a) Monitor malfunction		
Total	<u>0.00</u>	
b) Non-monitor malfunction		
Total	<u>0.00</u>	
c) QA calibration		
Total	<u>0.00</u>	
d) Other known causes		
1/28/19 16:00		
1/28/19 17:00	<u>1.00</u>	Communications error
Total	<u>1.00</u>	
e) Unknown causes		
Total	<u>0.00</u>	

MINNESOTA POLLUTION CONTROL AGENCY

AQD FILE #: #0203 (AI ID 447)

EXCESS EMISSION AND CEM REPORTING FORM

POLLUTANT (circle one): SO₂ NO_x CO CO₂ O₂ TRS H₂S HCL Opacity
 Other Flow

REPORTING QUARTER: First, 2019 MONITOR
 MODEL: Fuel Gas Flow Rate/FG H₂S CEM

FACILITY: St. Paul Park Refining Co. LLC MFR: _____

EMISSION SUBJECT ITEM: EQUI6 EMISSION LIMIT AND AVERAGE TIME:
 2.83 - 3 hour rolling avg.
 1.75 lb SO₂/mmbtu - 3 hour rolling avg.

EMISSION UNIT(S): Crude Charge Heater EMISSION BASIS: SIP for SO₂ NAAQS
 Heater 1-B-7

ASSOCIATED ITEMS: COMG7, COMG14, EQUI163, EQUI182, EQUI183, STRU69

OPERATING HOURS OF EMISSION UNIT:

Total
2160

A. EMISSION DATA SUMMARY			B. CEM Performance Summary	
DURATION OF EXCESS EMISSIONS (HRS)			1 DURATION OF CEM DOWNTIME DURING SOURCE OPERATION (HRS)	
1	lb/hr	lb/mmbtu		Fuel Gas
a) Startup/Shutdown	0.00	0.00	a) Monitor malfunction	0.00
b) Control equipment	0.00	0.00	b) Non-monitor malfunction	0.00
c) Process problems	0.00	0.00	c) QA calibration	0.00
d) Other known causes	0.00	0.00	d) Other known causes	0.00
e) Unknown causes	0.00	0.00	e) Unknown causes	0.00
f) Soot blowing	0.00	0.00		
g) Fuel problems	0.00	0.00		
2 TOTAL DURATION (HRS)	0.00	0.00	2 TOTAL DURATION (HRS)	0.00
3 PERCENT OF TOTAL EXCESS EMISSIONS	0.00%	0.00%	3 PERCENT OF TOTAL CEM DOWNTIME	0.00%

FOR OPACITY, RECORD ALL TIMES IN MINUTES. FOR GASES, RECORD ALL TIMES IN HOURS.

% Total Excess Emissions = Total Duration of Excess Emissions / (Total Operating Time - CEM Downtime)

NOTES: _____

If no exceedances: I certify that the required analyses were made, that I am familiar with the results, and that to the best of my knowledge there were no exceedances during the reporting period. I certify that I am familiar with the information in this report and that to the best of my knowledge the information is valid.

SUBMITTED BY: See certification page at front of report DATE: _____

CONTINUOUS EMISSION MONITOR EXCESS EMISSION REPORT

REPORTING QUARTER: First, 2019 AQD FILE #: #0203 (AI ID 447)
 EMISSION UNIT(S): EQUI6
 POLLUTANT MONITORED: SO2 lb/hr

DATE/TIME	TOTAL DURATION (HRS)	MAX. CONCENTRATION	CAUSE/CORRECTIVE ACTION
a) Startup/Shutdown			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
b) Control equipment			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
c) Process problems			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
d) Other known causes			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
e) Unknown causes			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
f) Soot blowing			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
g) Fuel problems			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		

CONTINUOUS EMISSION MONITOR EXCESS EMISSION REPORT

REPORTING QUARTER: First, 2019 AQD FILE #: #0203 (AI ID 447)
 EMISSION UNIT(S): EQUI6
 POLLUTANT MONITORED: SO2 lb/mmbtu

DATE/TIME	TOTAL DURATION (HRS)	MAX. CONCENTRATION	CAUSE/CORRECTIVE ACTION
a) Startup/Shutdown			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
b) Control equipment			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
c) Process problems			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
d) Other known causes			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
e) Unknown causes			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
f) Soot blowing			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
g) Fuel problems			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		

CONTINUOUS EMISSION MONITOR DOWNTIME REPORT

REPORTING QUARTER: First, 2019 AOD FILE #: #0203 (AI ID 447)

EMISSION UNIT(S): Heater 1-B-7

POLLUTANT MONITORED: Fuel Gas Flow Rate

DATE/TIME	TOTAL DURATION (HRS)	CAUSE/CORRECTIVE ACTION
a) Monitor malfunction		
Total	<u>0.00</u>	
b) Non-monitor malfunction		
Total	<u>0.00</u>	
c) QA calibration		
Total	<u>0.00</u>	
d) Other known causes		
Total	<u>0.00</u>	
e) Unknown causes		
Total	<u>0.00</u>	

MINNESOTA POLLUTION CONTROL AGENCY

AQD FILE #: #0203 (AI ID 447)

EXCESS EMISSION AND CEM REPORTING FORM

POLLUTANT (circle one): SO₂ NO_x CO CO₂ O₂ TRS H₂S HCL Opacity

Other:

Flow

REPORTING QUARTER: First, 2019

MONITOR

MODEL: Fuel Gas Flow Rate/FG H₂S CEM

FACILITY: St. Paul Park Refining Co. LLC

MFR: _____

EMISSION SUBJECT ITEM: EQUI7

EMISSION LIMITS AND AVERAGING TIME:

1.41 lb SO₂/hr - 3 hour rolling avg.

1.75 lb SO₂/mmBtu - 3 hour rolling avg.

EMISSION UNIT(S): Distillate Unifiner
 29-B-1, 29-B-2

EMISSION BASIS: SIP for SO₂ NAAQS

ASSOCIATED ITEMS: COMG7, EQUI163, EQUI184, STRU68

TOTAL OPERATING HOURS

OF EMISSION UNIT: 2160

A. EMISSION DATA SUMMARY

1 DURATION OF EXCESS EMISSIONS (HRS)

	lb/hr	lb/mmBtu
a) Startup/Shutdown	0.00	0.00
b) Control equipment	0.00	0.00
c) Process problems	0.00	0.00
d) Other known causes	0.00	0.00
e) Unknown causes	0.00	0.00
f) Soot blowing	0.00	0.00
g) Fuel problems	0.00	0.00
2 TOTAL DURATION (HRS)	0.00	0.00
3 PERCENT OF TOTAL EXCESS EMISSIONS	0.00%	0.00%

B. CEM PERFORMANCE SUMMARY

1 DURATION OF CEM DOWNTIME DURING SOURCE OPERATION (HRS)

a) Monitor malfunction	0.00
b) Non-monitor malfunction	0.00
c) QA calibration	2.00
d) Other known causes	0.00
e) Unknown causes	0.00
2 TOTAL DURATION (HRS)	2.00
3 PERCENT OF TOTAL CEM DOWNTIME	0.09%

FOR OPACITY, RECORD ALL TIMES IN MINUTES. FOR GASES, RECORD ALL TIMES IN HOURS.

% Total Excess Emissions = Total Duration of Excess Emissions / (Total Operating Time - CEM Downtime)

% Total CEM Downtime = CEM Downtime / Total Operating Time

NOTES: _____

If no exceedances: I certify that the required analyses were made, that I am familiar with the results, and that to the best of my knowledge there were no exceedances during the reporting period. I certify that I am familiar with the information in this report and that to the best of my knowledge the information is valid.

SUBMITTED BY: See certification page at front of report

DATE: _____

CONTINUOUS EMISSION MONITOR EXCESS EMISSION REPORT

REPORTING QUARTER: First, 2019 AQD FILE #: #0203 (AI ID 447)

EMISSION UNIT(S): 29-B-1, 29-B-2

POLLUTANT MONITORED: SO2 - lb/hr

DATE/TIME	TOTAL DURATION (HRS)	MAX. CONCENTRATION	CAUSE/CORRECTIVE ACTION
a) Startup/Shutdown			
1/1/2019			
4/1/2019			No excess emissions.
Total	0.00		
b) Control equipment			
1/1/2019			
4/1/2019			No excess emissions.
Total	0.00		
c) Process problems			
1/1/2019			
4/1/2019			No excess emissions.
Total	0.00		
d) Other known causes			
1/1/2019			
4/1/2019			No excess emissions.
Total	0.00		
e) Unknown causes			
1/1/2019			
4/1/2019			No excess emissions.
Total	0.00		
f) Soot blowing			
1/1/2019			
4/1/2019			No excess emissions.
Total	0.00		
g) Fuel problems			
1/1/2019			
4/1/2019			No excess emissions.
Total	0.00		

CONTINUOUS EMISSION MONITOR EXCESS EMISSION REPORT

REPORTING QUARTER: First, 2019 AQD FILE #: #0203 (AI ID 447)

EMISSION UNIT(S): 29-B-1, 29-B-2

POLLUTANT MONITORED: SO2 - lb/mmBtu

DATE/TIME	TOTAL DURATION (HRS)	MAX. CONCENTRATION	CAUSE/CORRECTIVE ACTION
a) Startup/Shutdown			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
b) Control equipment			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
c) Process problems			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
d) Other known causes			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
e) Unknown causes			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
f) Soot blowing			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
g) Fuel problems			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		

CONTINUOUS EMISSION MONITOR DOWNTIME REPORT

REPORTING QUARTER: First, 2019 AQD FILE #: #0203 (AI ID 447)

EMISSION UNIT(S): 29-B-1, 29-B-2 Fuel Gas Flow Rate

POLLUTANT MONITORED: SO2

DATE/TIME	TOTAL DURATION (HRS)	CAUSE/CORRECTIVE ACTION
a) Monitor malfunction		
Total	<u>0.00</u>	
b) Non-monitor malfunction		
Total	<u>0.00</u>	
c) QA calibration		
3/26/2019 8:00		
3/26/2019 9:00	1.00	Annual meter calibration - 29-B-1
3/26/2019 10:00		
3/26/2019 11:00	1.00	Annual meter calibration - 29-B-2
Total	<u>2.00</u>	
d) Other known causes		
Total	<u>0.00</u>	
e) Unknown causes		
Total	<u>0.00</u>	

MINNESOTA POLLUTION CONTROL AGENCY

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AQD FILE #: #0203 (AI ID 447)

EXCESS EMISSION AND CEM REPORTING FORM

POLLUTANT (circle one): SO2 NOx CO CO2 O2 TRS H2S HCL Opacity

Other: Flow

REPORTING QUARTER: First, 2019

MONITOR

MODEL: Fuel Gas Flow Rate/FG H2S CEM

FACILITY:

St. Paul Park Refining Co. LLC

MFR:

EMISSION SUBJECT ITEM: EQUI8

EMISSION LIMITS AND AVERAGING TIME:

1.95 lb SO2/hr - 3 hr rolling average

1.75 lb SO2/mmbtu - 3 hour rolling avg.

EMISSION UNIT(S): Naphtha Unifiner Heater

EMISSION BASIS:

SIP for SO2 NAAQS

3-B-1, 3-B-2, 3-B-3

ASSOCIATED ITEMS:

COMG9, COMG7, EQUI163, EQUI185, STRU19

TOTAL OPERATING HOURS

OF EMISSION UNIT: 2160

A. EMISSION DATA SUMMARY

1 DURATION OF EXCESS EMISSIONS (HRS)

	lb/hr	lb/mmbtu
a) Startup/Shutdown	0.00	0.00
b) Control equipment	0.00	0.00
c) Process problems	0.00	0.00
d) Other known causes	0.00	0.00
e) Unknown causes	0.00	0.00
f) Soot blowing	0.00	0.00
g) Fuel problems	0.00	0.00
2 TOTAL DURATION (HRS)	0.00	0.00
3 PERCENT OF TOTAL EXCESS EMISSIONS	0.00%	0.00%

B. CEM PERFORMANCE SUMMARY

1 DURATION OF CEM DOWNTIME DURING SOURCE OPERATION (HRS)

a) Monitor malfunction	0.00
b) Non-monitor malfunction	0.00
c) QA calibration	0.00
d) Other known causes	0.00
e) Unknown causes	0.00
2 TOTAL DURATION (HRS)	0.00
3 PERCENT OF TOTAL CEM DOWNTIME	0.00%

FOR OPACITY, RECORD ALL TIMES IN MINUTES. FOR GASES, RECORD ALL TIMES IN HOURS.

% Total Excess Emissions =

Total Duration of Excess Emissions / (Total Operating Time - CEM Downtime)

% Total CEM Downtime =

CEM Downtime / Total Operating Time

NOTES:

If no exceedances: I certify that the required analyses were made, that I am familiar with the results, and that to the best of my knowledge there were no exceedances during the reporting period. I certify that I am familiar with the information in this report and that to the best of my knowledge the information is valid.

SUBMITTED BY: See certification page at front of report

DATE:

CONTINUOUS EMISSION MONITOR EXCESS EMISSION REPORT

REPORTING QUARTER: First, 2019 AQD FILE #: #0203 (AI ID 447)

EMISSION UNIT(S): 3-B-1, 3-B-2, 3-B-3

POLLUTANT MONITORED: S02 - lb/hr

DATE/TIME	TOTAL DURATION (HRS)	MAX. CONCENTRATION	CAUSE/CORRECTIVE ACTION
a) Startup/Shutdown			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
b) Control equipment			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
c) Process problems			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
d) Other known causes			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
e) Unknown causes			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
f) Soot blowing			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
g) Fuel problems			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		

CONTINUOUS EMISSION MONITOR EXCESS EMISSION REPORT

REPORTING QUARTER: First, 2019 AQD FILE #: #0203 (AI ID 447)

EMISSION UNIT(S): 3-B-1, 3-B-2, 3-B-3

POLLUTANT MONITORED: S02 - lb/mmBtu

DATE/TIME	TOTAL DURATION (HRS)	MAX. CONCENTRATION	CAUSE/CORRECTIVE ACTION
a) Startup/Shutdown			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
b) Control equipment			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
c) Process problems			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
d) Other known causes			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
e) Unknown causes			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
f) Soot blowing			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
g) Fuel problems			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		

CONTINUOUS EMISSION MONITOR DOWNTIME REPORT

REPORTING QUARTER: First, 2019 AOD FILE #: #0203 (AI ID 447)

EMISSION UNIT(S): 3-B-1,2,3 Fuel Gas Flow Rate

POLLUTANT MONITORED: S02

DATE/TIME	TOTAL DURATION (HRS)	CAUSE/CORRECTIVE ACTION
a) Monitor malfunction		
Total	<u>0.00</u>	
b) Non-monitor malfunction		
Total	<u>0.00</u>	
c) QA calibration		
Total	<u>0.00</u>	
d) Other known causes		
Total	<u>0.00</u>	
e) Unknown causes		
Total	<u>0.00</u>	

MINNESOTA POLLUTION CONTROL AGENCY

AQD FILE #: #0203 (AI ID 447)

EXCESS EMISSION AND CEM REPORTING FORM

POLLUTANT (circle one): SO₂ NO_x CO CO₂ O₂ TRS H₂S HCL Opacity

Other:

Flow

REPORTING QUARTER: First, 2019

MONITOR

MODEL: Fuel Gas Flow Rate/FG H₂S CEM

FACILITY: St. Paul Park Refining Co. LLC

MFR: _____

EMISSION SUBJECT ITEM: EQUI9

EMISSION LIMITS AND AVERAGING TIME:

1.95 lb SO₂/hr - 3 hour rolling average

1.75 lb SO₂/mmBtu - 3 hour rolling avg.

EMISSION UNIT(S): Platformer Charge Heater
3-B-4

EMISSION BASIS: SIP for SO₂ NAAQS

ASSOCIATED ITEMS: COMG9, COMG7, EQUI163, EQUI186, STRU67

TOTAL OPERATING HOURS

OF EMISSION UNIT: 2160

A. EMISSION DATA SUMMARY			B. CEM PERFORMANCE SUMMARY	
1 DURATION OF EXCESS EMISSIONS (HRS)			1 DURATION OF CEM DOWNTIME DURING SOURCE OPERATION (HRS)	
	lb/hr	lb/mmBtu		
a) Startup/Shutdown	0.00	0.00	a) Monitor malfunction	0.00
b) Control equipment	0.00	0.00	b) Non-monitor malfunction	0.00
c) Process problems	0.00	0.00	c) QA calibration	0.00
d) Other known causes	0.00	0.00	d) Other known causes	0.00
e) Unknown causes	0.00	0.00	e) Unknown causes	0.00
f) Soot blowing	0.00	0.00		
g) Fuel problems	0.00	0.00		
2 TOTAL DURATION (HRS)	0.00	0.00	2 TOTAL DURATION (HRS)	0.00
3 PERCENT OF TOTAL EXCESS EMISSIONS	0.00%	0.00%	3 PERCENT OF TOTAL CEM DOWNTIME	0.00%

FOR OPACITY, RECORD ALL TIMES IN MINUTES. FOR GASES, RECORD ALL TIMES IN HOURS.

% Total Excess Emissions = $\frac{\text{Total Duration of Excess Emissions}}{(\text{Total Operating Time} - \text{CEM Downtime})}$

% Total CEM Downtime = $\frac{\text{CEM Downtime}}{\text{Total Operating Time}}$

NOTES: _____

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SUBMITTED BY: See certification page at front of report

DATE: _____

**CONTINUOUS EMISSION MONITOR
EXCESS EMISSION REPORT**

REPORTING QUARTER: First, 2019 AQD FILE #: #0203 (AI ID 447)
EMISSION UNIT(S): 3-B-4
POLLUTANT MONITORED: S02 - lb/hr

	DATE/TIME	TOTAL DURATION (HRS)	MAX. CONCENTRATION	CAUSE/CORRECTIVE ACTION
a) Startup/Shutdown				
	1/1/2019			
	4/1/2019		No excess emissions.	
Total		0.00		
b) Control equipment				
	1/1/2019			
	4/1/2019		No excess emissions.	
Total		0.00		
c) Process problems				
	1/1/2019			
	4/1/2019		No excess emissions.	
Total		0.00		
d) Other known causes				
	1/1/2019			
	4/1/2019		No excess emissions.	
Total		0.00		
e) Unknown causes				
	1/1/2019			
	4/1/2019		No excess emissions.	
Total		0.00		
f) Soot blowing				
	1/1/2019			
	4/1/2019		No excess emissions.	
Total		0.00		
g) Fuel problems				
	1/1/2019			
	4/1/2019		No excess emissions.	
Total		0.00		

CONTINUOUS EMISSION MONITOR EXCESS EMISSION REPORT

REPORTING QUARTER: First, 2019 AQD FILE #: #0203 (AI ID 447)

EMISSION UNIT(S): 3-B-4

POLLUTANT MONITORED: S02 - lb/MMBtu

DATE/TIME	TOTAL DURATION (HRS)	MAX. CONCENTRATION	CAUSE/CORRECTIVE ACTION
a) Startup/Shutdown			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
b) Control equipment			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
c) Process problems			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
d) Other known causes			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
e) Unknown causes			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
f) Soot blowing			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
g) Fuel problems			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		

CONTINUOUS EMISSION MONITOR DOWNTIME REPORT

REPORTING QUARTER: First, 2019 AOD FILE #: #0203 (AI ID 447)

EMISSION UNIT(S): 3-B-4 Fuel Gas Flow Rate

POLLUTANT MONITORED: S02

DATE/TIME	TOTAL DURATION (HRS)	CAUSE/CORRECTIVE ACTION
a) Monitor malfunction		
Total	<u>0.00</u>	
b) Non-monitor malfunction		
Total	<u>0.00</u>	
c) QA calibration		
Total	<u>0.00</u>	
d) Other known causes		
Total	<u>0.00</u>	
e) Unknown causes		
Total	<u>0.00</u>	

MINNESOTA POLLUTION CONTROL AGENCY

AQD FILE #: #0203 (AI ID 447)

EXCESS EMISSION AND CEM REPORTING FORM

POLLUTANT (circle one): SO₂ NO_x CO CO₂ O₂ TRS H₂S HCL Opacity

Other: Flow

REPORTING QUARTER: First, 2019

MONITOR

MODEL: Fuel Gas Flow Rate/FG H₂S CEM

FACILITY: St. Paul Park Refining Co. LLC

MFR: _____

EMISSION SUBJECT ITEM: EQUI10

EMISSION LIMITS AND AVERAGING TIME:

1.68 lb SO₂/hr - 3 hr rolling average
1.75 lb SO₂/mmbtu - 3 hour rolling avg.

EMISSION UNIT(S): Platformer interheater #1
 3-B-7

EMISSION BASIS: SIP for SO₂ NAAQS

ASSOCIATED ITEMS: COMG9, COMG7, EQUI163, EQUI187, STRU66

TOTAL OPERATING HOURS

OF EMISSION UNIT: 2160

A. EMISSION DATA SUMMARY

1 DURATION OF EXCESS EMISSIONS (HRS)

	lb/hr	lb/mmbtu
a) Startup/Shutdown	0.00	0.00
b) Control equipment	0.00	0.00
c) Process problems	0.00	0.00
d) Other known causes	0.00	0.00
e) Unknown causes	0.00	0.00
f) Soot blowing	0.00	0.00
g) Fuel problems	0.00	0.00
2 TOTAL DURATION (HRS)	0.00	0.00
3 PERCENT OF TOTAL EXCESS EMISSIONS	0.00%	0.00%

B. CEM PERFORMANCE SUMMARY

1 DURATION OF CEM DOWNTIME DURING SOURCE OPERATION (HRS)

a) Monitor malfunction	0.00
b) Non-monitor malfunction	0.00
c) QA calibration	0.00
d) Other known causes	0.00
e) Unknown causes	0.00
2 TOTAL DURATION (HRS)	0.00
3 PERCENT OF TOTAL CEM DOWNTIME	0.00%

FOR OPACITY, RECORD ALL TIMES IN MINUTES. FOR GASES, RECORD ALL TIMES IN HOURS.

% Total Excess Emissions = Total Duration of Excess Emissions / (Total Operating Time - CEM Downtime)

% Total CEM Downtime = CEM Downtime / Total Operating Time

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SUBMITTED BY: See certification page at front of report

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CONTINUOUS EMISSION MONITOR EXCESS EMISSION REPORT

REPORTING QUARTER: First, 2019 AQD FILE #: #0203 (AI ID 447)
 EMISSION UNIT(S): 3-B-7
 POLLUTANT MONITORED: S02 - lb/hr

DATE/TIME	TOTAL DURATION (HRS)	MAX. CONCENTRATION	CAUSE/CORRECTIVE ACTION
a) Startup/Shutdown			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
b) Control equipment			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
c) Process problems			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
d) Other known causes			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
e) Unknown causes			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
f) Soot blowing			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
g) Fuel problems			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		

CONTINUOUS EMISSION MONITOR EXCESS EMISSION REPORT

REPORTING QUARTER: First, 2019 AQD FILE #: #0203 (AI ID 447)
 EMISSION UNIT(S): 3-B-7
 POLLUTANT MONITORED: S02 - lb/mmbtu

DATE/TIME	TOTAL DURATION (HRS)	MAX. CONCENTRATION	CAUSE/CORRECTIVE ACTION
a) Startup/Shutdown			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
b) Control equipment			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
c) Process problems			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
d) Other known causes			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
e) Unknown causes			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
f) Soot blowing			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
g) Fuel problems			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		

CONTINUOUS EMISSION MONITOR DOWNTIME REPORT

REPORTING QUARTER: First, 2019 AQD FILE #: #0203 (AI ID 447)

EMISSION UNIT(S): 3-B-7 Fuel Gas Flow Rate

POLLUTANT MONITORED: S02

DATE/TIME	TOTAL DURATION (HRS)	CAUSE/CORRECTIVE ACTION
a) Monitor malfunction		
Total	<u>0.00</u>	
b) Non-monitor malfunction		
Total	<u>0.00</u>	
c) QA calibration		
Total	<u>0.00</u>	
d) Other known causes		
Total	<u>0.00</u>	
e) Unknown causes		
Total	<u>0.00</u>	

MINNESOTA POLLUTION CONTROL AGENCY

AQD FILE # #0203 (AI ID 447)

EXCESS EMISSION AND CEM REPORTING FORM

POLLUTANT (circle one): SO₂ NO_x CO CO₂ O₂ TRS H₂S HCL Opacity

Other:

Flow

REPORTING QUARTER: First, 2019

MONITOR

MODEL: Fuel Gas Flow Rate/FG H₂S CEM

FACILITY: St. Paul Park Refining Co. LLC

MFR: _____

EMISSION SUBJECT ITEM: EQUI11

EMISSION LIMITS AND AVERAGING TIME:

1.08 lb SO₂/hr - 3 hour rolling avg.

1.75 lb SO₂/mmbtu - 3 hour rolling avg.

EMISSION UNIT(S): Platformer Interheater #2
3-B-8

EMISSION BASIS: SIP for SO₂ NAAQS

ASSOCIATED ITEMS: COMG9, COMG7, EQUI163, EQUI188, STRU65

TOTAL OPERATING HOURS

OF EMISSION UNIT: 2160

A. EMISSION DATA SUMMARY			B. CEM PERFORMANCE SUMMARY	
1 DURATION OF EXCESS EMISSIONS (HRS)			1 DURATION OF CEM DOWNTIME DURING SOURCE OPERATION (HRS)	
	lb/hr	lb/MMBtu		
a) Startup/Shutdown	0.00	0.00	a) Monitor malfunction	0.00
b) Control equipment	0.00	0.00	b) Non-monitor malfunction	0.00
c) Process problems	0.00	0.00	c) QA calibration	0.00
d) Other known causes	0.00	0.00	d) Other known causes	0.00
e) Unknown causes	0.00	0.00	e) Unknown causes	0.00
f) Soot blowing	0.00	0.00		
g) Fuel problems	0.00	0.00		
2 TOTAL DURATION (HRS)	0.00	0.00	2 TOTAL DURATION (HRS)	0.00
3 PERCENT OF TOTAL EXCESS EMISSIONS	0.00%	0.00%	3 PERCENT OF TOTAL CEM DOWNTIME	0.00%

FOR OPACITY, RECORD ALL TIMES IN MINUTES. FOR GASES, RECORD ALL TIMES IN HOURS.

% Total Excess Emissions = $\frac{\text{Total Duration of Excess Emissions}}{(\text{Total Operating Time} - \text{CEM Downtime})}$

% Total CEM Downtime = $\frac{\text{CEM Downtime}}{\text{Total Operating Time}}$

NOTES: _____

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SUBMITTED BY: See certification page at front of report

DATE: _____

CONTINUOUS EMISSION MONITOR EXCESS EMISSION REPORT

REPORTING QUARTER: First, 2019 AQD FILE #: #0203 (AI ID 447)
 EMISSION UNIT(S): 3-B-8
 POLLUTANT MONITORED: S02 - lb/hr

	DATE/TIME	TOTAL DURATION (HRS)	MAX. CONCENTRATION	CAUSE/CORRECTIVE ACTION
a) Startup/Shutdown				
	1/1/2019			
	4/1/2019		No excess emissions.	
Total		0.00		
b) Control equipment				
	1/1/2019			
	4/1/2019		No excess emissions.	
Total		0.00		
c) Process problems				
	1/1/2019			
	4/1/2019		No excess emissions.	
Total		0.00		
d) Other known causes				
	1/1/2019			
	4/1/2019		No excess emissions.	
Total		0.00		
e) Unknown causes				
	1/1/2019			
	4/1/2019		No excess emissions.	
Total		0.00		
f) Soot blowing				
	1/1/2019			
	4/1/2019		No excess emissions.	
Total		0.00		
g) Fuel problems				
	1/1/2019			
	4/1/2019		No excess emissions.	
Total		0.00		

**CONTINUOUS EMISSION MONITOR
EXCESS EMISSION REPORT**

REPORTING QUARTER: First, 2019 AQD FILE #: #0203 (AI ID 447)
EMISSION UNIT(S): 3-B-8
POLLUTANT MONITORED: S02 - lb/mmbtu

		TOTAL	
DATE/TIME	DURATION (HRS)	MAX. CONCENTRATION	CAUSE/CORRECTIVE ACTION
a) Startup/Shutdown			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
b) Control equipment			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
c) Process problems			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
d) Other known causes			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
e) Unknown causes			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
f) Soot blowing			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
g) Fuel problems			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		

**CONTINUOUS EMISSION MONITOR
DOWNTIME REPORT**

REPORTING QUARTER: First, 2019 AOD FILE #: #0203 (AI ID 447)
EMISSION UNIT(S): 3-B-8 Fuel Gas Flow Rate
POLLUTANT MONITORED: SO2

DATE/TIME	TOTAL DURATION (HRS)	CAUSE/CORRECTIVE ACTION
a) Monitor malfunction		
Total	<u>0.00</u>	
b) Non-monitor malfunction		
Total	<u>0.00</u>	
c) QA calibration		
Total	<u>0.00</u>	
d) Other known causes		
Total	<u>0.00</u>	
e) Unknown causes		
Total	<u>0.00</u>	

MINNESOTA POLLUTION CONTROL AGENCY

AQD FILE #: #0203 (AI ID 447)

EXCESS EMISSION AND CEM REPORTING FORM

POLLUTANT (circle one): SO₂ NO_x CO CO₂ O₂ TRS H₂S HCL Opacity
 Other: Flow

REPORTING QUARTER: First, 2019

FACILITY: St. Paul Park Refining Co. LLC

EMISSION SUBJECT ITEM: EQUI12

EMISSION UNIT(S): Desulfurizer Heater
 Heater 34-B-1

ASSOCIATED ITEMS: COMG7, COMG14, EQUI163, EQUI189, MR029, STRU64

MONITOR
 MODEL: Fuel Gas Flow Rate/FG H₂S CEM

MFR: _____

EMISSION LIMIT AND AVERAGE TIME:
 0.76 lb SO₂/hr - 3 hour rolling average
 1.75 lb SO₂/mmbtu - 3 hour rolling avg.

EMISSION BASIS: SIP for SO₂ NAAQS

TOTAL OPERATING HOURS
 OF EMISSION UNIT: 2159

A. EMISSION DATA SUMMARY			B. CEM Performance Summary	
1 DURATION OF EXCESS EMISSIONS (HRS)			1 DURATION OF CEM DOWNTIME DURING SOURCE OPERATION (HRS)	
	lb/hr	lb/MMBtu		
a) Startup/Shutdown	0.00	0.00	a) Monitor malfunction	0.00
b) Control equipment	0.00	0.00	b) Non-monitor malfunction	0.00
c) Process problems	0.00	0.00	c) QA calibration	1.00
d) Other known causes	0.00	0.00	d) Other known causes	0.00
e) Unknown causes	0.00	0.00	e) Unknown causes	0.00
f) Soot blowing	0.00	0.00		
g) Fuel problems	0.00	0.00		
2 TOTAL DURATION (HRS)	0.00	0.00	2 TOTAL DURATION (HRS)	1.00
3 PERCENT OF TOTAL EXCESS EMISSIONS	0.00%	0.00%	3 PERCENT OF TOTAL CEM DOWNTIME	0.05%

FOR OPACITY, RECORD ALL TIMES IN MINUTES. FOR GASES, RECORD ALL TIMES IN HOURS.

% Total Excess Emissions = Total Duration of Excess Emissions / (Total Operating Time - CEM Downtime)

% Total CEM Downtime = CEM Downtime / Total Operating Time

NOTES: _____

If no exceedances: I certify that the required analyses were made, that I am familiar with the results, and that to the best of my knowledge there were no exceedances during the reporting period. I certify that I am familiar with the information in this report and that to the best of my knowledge the information is valid.

SUBMITTED BY: See certification page at front of report DATE: _____

CONTINUOUS EMISSION MONITOR EXCESS EMISSION REPORT

REPORTING QUARTER: First, 2019 AQD FILE #: #0203 (AI ID 447)

EMISSION UNIT(S): Heater 34-B-1

POLLUTANT MONITORED: SO2 lb/hr

DATE/TIME	TOTAL DURATION (HRS)	MAX. CONCENTRATION	CAUSE/CORRECTIVE ACTION
a) Startup/Shutdown			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
b) Control equipment			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
c) Process problems			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
d) Other known causes			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
e) Unknown causes			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
f) Soot blowing			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
g) Fuel problems			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		

CONTINUOUS EMISSION MONITOR EXCESS EMISSION REPORT

REPORTING QUARTER: First, 2019 AQD FILE #: #0203 (AI ID 447)

EMISSION UNIT(S): Heater 34-B-1

POLLUTANT MONITORED: SO2 lb/mmbtu

DATE/TIME	TOTAL DURATION (HRS)	MAX. CONCENTRATION	CAUSE/CORRECTIVE ACTION
a) Startup/Shutdown			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
b) Control equipment			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
c) Process problems			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
d) Other known causes			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
e) Unknown causes			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
f) Soot blowing			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
g) Fuel problems			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		

CONTINUOUS EMISSION MONITOR DOWNTIME REPORT

REPORTING QUARTER: First, 2019 AQR FILE #: #0203 (AI ID 447)

EMISSION UNIT(S): Heater 34-B-1

POLLUTANT MONITORED: Fuel Gas Flow Rate

DATE/TIME	TOTAL DURATION (HRS)	CAUSE/CORRECTIVE ACTION
a) Monitor malfunction		
Total	<u>0.00</u>	
b) Non-monitor malfunction		
Total	<u>0.00</u>	
c) QA calibration		
2/26/2019 15:00		
2/26/2019 16:00	<u>1.00</u>	Annual meter calibration
Total	<u>1.00</u>	
d) Other known causes		
Total	<u>0.00</u>	
e) Unknown causes		
Total	<u>0.00</u>	

MINNESOTA POLLUTION CONTROL AGENCY

AQD FILE #: #0203 (AI ID 447)

EXCESS EMISSION AND CEM REPORTING FORM

POLLUTANT (circle one): SO2 NOx CO CO2 O2 TRS H2S HCL Opacity
 Other: Flow

REPORTING QUARTER: First, 2019

FACILITY: St. Paul Park Refining Co. LLC

EMISSION SUBJECT ITEM: EQUI13

EMISSION UNIT(S): Hot Oil Heater
 Heater 34-B-2

ASSOCIATED ITEMS: COMG7, COMG14, EQUI163, EQUI190, EQUI191, STRU64

MONITOR
 MODEL: Fuel Gas Flow Rate/FG H2S CEM

MFR: _____

EMISSION LIMIT AND AVERAGE TIME:
 2.62 lb SO2/hr - 3 hour rolling avg.
 1.75 lb SO2/mmbtu - 3 hour rolling avg.

EMISSION BASIS: SIP for SO2 NAAQS

OPERATING HOURS OF EMISSION UNIT:

Total
 2160

A. EMISSION DATA SUMMARY			B. CEM Performance Summary	
1 DURATION OF EXCESS EMISSIONS (HRS)			1 DURATION OF CEM DOWNTIME DURING SOURCE OPERATION (HRS)	
	lb/hr	lb/mmbtu		
a) Startup/Shutdown	0.00	0.00	a) Monitor malfunction	0.00
b) Control equipment	0.00	0.00	b) Non-monitor malfunction	0.00
c) Process problems	0.00	0.00	c) QA calibration	0.00
d) Other known causes	0.00	0.00	d) Other known causes	2.00
e) Unknown causes	0.00	0.00	e) Unknown causes	0.00
f) Soot blowing	0.00	0.00		
g) Fuel problems	0.00	0.00		
2 TOTAL DURATION (HRS)	0.00	0.00	2 TOTAL DURATION (HRS)	2.00
3 PERCENT OF TOTAL EXCESS EMISSIONS	0.00%	0.00%	3 PERCENT OF TOTAL CEM DOWNTIME	0.09%

FOR OPACITY, RECORD ALL TIMES IN MINUTES. FOR GASES, RECORD ALL TIMES IN HOURS.

% Total Excess Emissions = Total Duration of Excess Emissions / (Total Operating Time - CEM Downtime)

NOTES: There was zero fuel oil runtime during the quarter.

If no exceedances: I certify that the required analyses were made, that I am familiar with the results, and that to the best of my knowledge there were no exceedances during the reporting period. I certify that I am familiar with the information in this report and that to the best of my knowledge the information is valid.

SUBMITTED BY: See certification page at front of report DATE: _____

CONTINUOUS EMISSION MONITOR EXCESS EMISSION REPORT

REPORTING QUARTER: First, 2019 AQD FILE #: #0203 (AI ID 447)

EMISSION UNIT(S): Heater 34-B-2

POLLUTANT MONITORED: SO2 lb/hr

DATE/TIME	TOTAL DURATION (HRS)	MAX. CONCENTRATION	CAUSE/CORRECTIVE ACTION
a) Startup/Shutdown			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
b) Control equipment			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
c) Process problems			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
d) Other known causes			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
e) Unknown causes			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
f) Soot blowing			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
g) Fuel problems			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		

CONTINUOUS EMISSION MONITOR EXCESS EMISSION REPORT

REPORTING QUARTER: First, 2019 AQD FILE #: #0203 (AI ID 447)
 EMISSION UNIT(S): Heater 34-B-2
 POLLUTANT MONITORED: SO2 lb/mmbtu

DATE/TIME	TOTAL DURATION (HRS)	MAX. CONCENTRATION	CAUSE/CORRECTIVE ACTION
a) Startup/Shutdown			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
b) Control equipment			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
c) Process problems			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
d) Other known causes			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
e) Unknown causes			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
f) Soot blowing			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
g) Fuel problems			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		

CONTINUOUS EMISSION MONITOR DOWNTIME REPORT

REPORTING QUARTER: First, 2019 AQD FILE #: #0203 (AI ID 447)

EMISSION UNIT(S): Heater 34-B-2

POLLUTANT MONITORED: Fuel Gas Flow Rate

DATE/TIME	TOTAL DURATION (HRS)	CAUSE/CORRECTIVE ACTION
a) Monitor malfunction		
Total	<u>0.00</u>	
b) Non-monitor malfunction		
Total	<u>0.00</u>	
c) QA calibration		
Total	<u>0.00</u>	
d) Other known causes		
2/26/19 10:00		
2/26/19 11:00	1.00	Communications error
2/26/19 13:00		
2/26/19 14:00	1.00	Communications error
Total	<u>2.00</u>	
e) Unknown causes		
Total	<u>0.00</u>	

MINNESOTA POLLUTION CONTROL AGENCY

AQD FILE #: #0203 (AI ID 447)

EXCESS EMISSION AND CEM REPORTING FORM

POLLUTANT (circle one): SO₂ **NO_x** CO CO₂ **O₂** TRS H₂S HCL Opacity

Other: _____

REPORTING QUARTER: First, 2019

MONITOR

MFR: ABB

Model: Advance Optima Limas 11

FACILITY:

St. Paul Park Refining Co. LLC

EMISSION LIMIT AND AVERAGE TIME:

0.050 lbs/mmbtu - 365 day rolling average

EMISSION SUBJECT ITEM: EQUI14

EMISSION BASIS:

Consent Decree

EMISSION UNIT(S): Heater 32-B-1

ASSOCIATED ITEMS: _____

TOTAL OPERATING HOURS

OF EMISSION UNIT: 2160

A. EMISSION DATA SUMMARY		B. CEM PERFORMANCE SUMMARY	
1 DURATION OF EXCESS EMISSIONS (HRS)		1 DURATION OF CEM DOWNTIME DURING SOURCE OPERATION (HRS)	
	365 day		
a) Startup/Shutdown	<u>0.00</u>	a) Monitor malfunction	<u>0.00</u>
b) Control equipment	<u>0.00</u>	b) Non-monitor malfunction	<u>0.00</u>
c) Process problems	<u>0.00</u>	c) QA calibration	<u>1.00</u>
d) Other known causes	<u>0.00</u>	d) Other known causes	<u>0.00</u>
e) Unknown causes	<u>0.00</u>	e) Unknown causes	<u>0.00</u>
f) Soot blowing	<u>0.00</u>		
g) Fuel problems	<u>0.00</u>		
2 TOTAL DURATION (HRS)	<u>0.00</u>	2 TOTAL DURATION (HRS)	<u>1.00</u>
3 PERCENT OF TOTAL EXCESS EMISSIONS	<u>0.00%</u>	3 PERCENT OF TOTAL CEM DOWNTIME	<u>0.05%</u>
FOR OPACITY, RECORD ALL TIMES IN MINUTES. FOR GASES, RECORD ALL TIMES IN HOURS.			

% Total Excess Emissions = $\frac{\text{Total Duration of Excess Emissions}}{(\text{Total Operating Time} - \text{CEM Downtime})}$

% Total CEM Downtime = $\frac{\text{CEM Downtime}}{\text{Total Operating Time}}$

NOTES:

If no exceedances: I certify that the required analyses were made, that I am familiar with the results, and that to the best of my knowledge there were no exceedances during the reporting period. I certify that I am familiar with the information in this report and that to the best of my knowledge the information is valid.

SUBMITTED BY: See certification page at front of report

DATE: _____

CONTINUOUS EMISSION MONITOR EXCESS EMISSION REPORT

REPORTING QUARTER: First, 2019 AQD FILE #: #0203 (AI ID 447)

EMISSION UNIT(S): Heater 32-B-1 (EQUI14)

POLLUTANT MONITORED: NOx (365 day rolling avg) and O2

DATE/TIME	DURATION	CONCENTRATION	CAUSE/CORRECTIVE ACTION
a) Startup/Shutdown			
1/1/2019			
4/1/2019			No excess emissions.
Total	0.00		
b) Control equipment			
1/1/2019			
4/1/2019			No excess emissions.
Total	0.00		
c) Process problems			
1/1/2019			
4/1/2019			No excess emissions.
Total	0.00		
d) Other known causes			
1/1/2019			
4/1/2019			No excess emissions.
Total	0.00		
e) Unknown causes			
1/1/2019			
4/1/2019			No excess emissions.
Total	0.00		
f) Soot blowing			
1/1/2019			
4/1/2019			No excess emissions.
Total	0.00		
g) Fuel problems			
1/1/2019			
4/1/2019			No excess emissions.
Total	0.00		

CONTINUOUS EMISSION MONITOR DOWNTIME REPORT

REPORTING QUARTER: First, 2019 AQD FILE #: #0203 (AI ID 447)

EMISSION UNIT(S): Heater 32-B-1 (EQUI14)

POLLUTANT MONITORED: NOx and O2

DATE/TIME	TOTAL DURATION (HRS)	CAUSE/CORRECTIVE ACTION
a) Monitor malfunction		
Total	<u>0.00</u>	
b) Non-monitor malfunction		
Total	<u>0.00</u>	
c) QA calibration		
1/28/2019 9:00		
1/28/2019 10:00	<u>1.00</u>	Quarterly audit
Total	<u>1.00</u>	
d) Other known causes		
Total	<u>0.00</u>	
e) Unknown causes		
Total	<u>0.00</u>	

MINNESOTA POLLUTION CONTROL AGENCY

AQD FILE #: #0203 (AI ID 447)

EXCESS EMISSION AND CEM REPORTING FORM

POLLUTANT (circle one): SO₂ NO_x CO CO₂ O₂ TRS H₂S HCL Opacity
 Other: Flow

REPORTING QUARTER: First, 2019

MONITOR

MODEL: Fuel Gas Flow Rate/FG H₂S CEM

FACILITY:

St. Paul Park Refining Co. LLC

MFR:

EMISSION SUBJECT ITEM: EQUI14

EMISSION LIMIT AND AVERAGE TIME:

2.97 lb SO₂/hr - 3 hour rolling average

1.75 lb SO₂/mmBtu - 3 hour rolling avg.

EMISSION BASIS: SIP for SO₂ NAAQS (Effective 9-10-2009)

EMISSION UNIT(S): HDH Heater

32-B-1

ASSOCIATED ITEMS:

COMG7, COMG14, EQUI163, EQUI192, STRU63

TOTAL OPERATING HOURS

OF EMISSION UNIT: 2160

A. EMISSION DATA SUMMARY			B. CEM Performance Summary	
1 DURATION OF EXCESS EMISSIONS (HRS)			1 DURATION OF CEM DOWNTIME DURING SOURCE OPERATION (HRS)	
	lb/hr	lb/mmBtu		Fuel Gas
a) Startup/Shutdown	0.00	0.00	a) Monitor malfunction	0.00
b) Control equipment	0.00	0.00	b) Non-monitor malfunction	0.00
c) Process problems	0.00	0.00	c) QA calibration	1.00
d) Other known causes	0.00	0.00	d) Other known causes	0.00
e) Unknown causes	0.00	0.00	e) Unknown causes	0.00
f) Soot blowing	0.00	0.00		
g) Fuel problems	0.00	0.00		
2 TOTAL DURATION (HRS)	0.00	0.00	2 TOTAL DURATION (HRS)	1.00
3 PERCENT OF TOTAL EXCESS EMISSIONS	0.00%	0.00%	3 PERCENT OF TOTAL CEM DOWNTIME	0.05%

FOR OPACITY, RECORD ALL TIMES IN MINUTES. FOR GASES, RECORD ALL TIMES IN HOURS.

% Total Excess Emissions = Total Duration of Excess Emissions / (Total Operating Time - CEM Downtime)

NOTES:

If no exceedances: I certify that the required analyses were made, that I am familiar with the results, and that to the best of my knowledge there were no exceedances during the reporting period. I certify that I am familiar with the information in this report and that to the best of my knowledge the information is valid.

SUBMITTED BY: See certification page at front of report

DATE:

CONTINUOUS EMISSION MONITOR EXCESS EMISSION REPORT

REPORTING QUARTER: First, 2019 AQD FILE #: #0203 (AI ID 447)

EMISSION UNIT(S): 32-B-1

POLLUTANT MONITORED: SO2 lb/hr

DATE/TIME	TOTAL DURATION (HRS)	MAX. CONCENTRATION	CAUSE/CORRECTIVE ACTION
a) Startup/Shutdown			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
b) Control equipment			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
c) Process problems			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
d) Other known causes			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
e) Unknown causes			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
f) Soot blowing			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
g) Fuel problems			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		

CONTINUOUS EMISSION MONITOR EXCESS EMISSION REPORT

REPORTING QUARTER: First, 2019 AOD FILE #: #0203 (AI ID 447)

EMISSION UNIT(S): 32-B-1

POLLUTANT MONITORED: SO2 lb/mmbtu

DATE/TIME	TOTAL DURATION (HRS)	MAX. CONCENTRATION	CAUSE/CORRECTIVE ACTION
a) Startup/Shutdown			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
b) Control equipment			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
c) Process problems			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
d) Other known causes			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
e) Unknown causes			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
f) Soot blowing			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
g) Fuel problems			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		

CONTINUOUS EMISSION MONITOR DOWNTIME REPORT

REPORTING QUARTER: First, 2019 AQD FILE #: #0203 (AI ID 447)

EMISSION UNIT(S): Heater 32-B-1

POLLUTANT MONITORED: Fuel Gas Flow Rate

DATE/TIME	TOTAL DURATION (HRS)	CAUSE/CORRECTIVE ACTION
a) Monitor malfunction		
Total	<u>0.00</u>	
b) Non-monitor malfunction		
Total	<u>0.00</u>	
c) QA calibration		
3/27/2019 8:00		
3/27/2019 9:00	<u>1.00</u>	Annual meter calibration
Total	<u>1.00</u>	
d) Other known causes		
Total	<u>0.00</u>	
e) Unknown causes		
Total	<u>0.00</u>	

MINNESOTA POLLUTION CONTROL AGENCY

AQD FILE # #0203 (AI ID 447)

EXCESS EMISSION AND CEM REPORTING FORM

POLLUTANT (circle one): SO₂ NO_x CO CO₂ O₂ TRS H₂S HCL Opacity
 Other: Flow

REPORTING QUARTER: First, 2019

FACILITY: St. Paul Park Refining Co. LLC

EMISSION SUBJECT ITEM: EQUI15

EMISSION UNIT(S): Dehex Reboiler Heater
 Heater 10-B-1

ASSOCIATED ITEMS: COMG7, COMG14, EQUI163, EQUI193, EQUI194, STRU9

MONITOR
 MODEL: Fuel Gas Flow Rate/FG H2S CEM

MFR: _____

EMISSION LIMIT AND AVERAGE TIME:
 1.60 lb SO₂/hr - 3 hour rolling avg.
 1.75 lb SO₂/mmbtu - 3 hour rolling avg.

EMISSION BASIS: SIP for SO₂ NAAQS

OPERATING HOURS OF EMISSION UNIT:

Total	Fuel Gas
2160	2160

A. EMISSION DATA SUMMARY			B. CEM Performance Summary	
DURATION OF EXCESS EMISSIONS (HRS)			1 DURATION OF CEM DOWNTIME DURING SOURCE OPERATION (HRS)	
1	lb/hr	lb/mmbtu		Fuel Gas
a) Startup/Shutdown	0.00	0.00	a) Monitor malfunction	0.00
b) Control equipment	0.00	0.00	b) Non-monitor malfunction	0.00
c) Process problems	0.00	0.00	c) QA calibration	0.00
d) Other known causes	0.00	0.00	d) Other known causes	0.00
e) Unknown causes	0.00	0.00	e) Unknown causes	0.00
f) Soot blowing	0.00	0.00		
g) Fuel problems	0.00	0.00		
2 TOTAL DURATION (HRS)	0.00	0.00	2 TOTAL DURATION (HRS)	0.00
3 PERCENT OF TOTAL EXCESS EMISSIONS	0.00%	0.00%	3 PERCENT OF TOTAL CEM DOWNTIME	0.00%
FOR OPACITY, RECORD ALL TIMES IN MINUTES. FOR GASES, RECORD ALL TIMES IN HOURS.				

FOR OPACITY, RECORD ALL TIMES IN MINUTES. FOR GASES, RECORD ALL TIMES IN HOURS.

% Total Excess Emissions = $\frac{\text{Total Duration of Excess Emissions}}{\text{Total Operating Time} - \text{CEM Downtime}}$

NOTES: There was zero fuel oil runtime during the quarter.

If no exceedances: I certify that the required analyses were made, that I am familiar with the results, and that to the best of my knowledge there were no exceedances during the reporting period. I certify that I am familiar with the information in this report and that to the best of my knowledge the information is valid.

SUBMITTED BY: See certification page at front of report DATE: _____

CONTINUOUS EMISSION MONITOR EXCESS EMISSION REPORT

REPORTING QUARTER: First, 2019 AQD FILE #: #0203 (AI ID 447)
 EMISSION UNIT(S): Heater 10-B-1
 POLLUTANT MONITORED: SO2 lb/hr

DATE/TIME	TOTAL DURATION (HRS)	MAX. CONCENTRATION	CAUSE/CORRECTIVE ACTION
a) Startup/Shutdown			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
b) Control equipment			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
c) Process problems			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
d) Other known causes			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
e) Unknown causes			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
f) Soot blowing			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
g) Fuel problems			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		

CONTINUOUS EMISSION MONITOR EXCESS EMISSION REPORT

REPORTING QUARTER: First, 2019 AQD FILE #: #0203 (AI ID 447)

EMISSION UNIT(S): Heater 10-B-1

POLLUTANT MONITORED: SO2 lb/mmbtu

DATE/TIME	TOTAL DURATION (HRS)	MAX. CONCENTRATION	CAUSE/CORRECTIVE ACTION
a) Startup/Shutdown			
1/1/2019			
4/1/2019			No excess emissions.
Total	0.00		
b) Control equipment			
1/1/2019			
4/1/2019			No excess emissions.
Total	0.00		
c) Process problems			
1/1/2019			
4/1/2019			No excess emissions.
Total	0.00		
d) Other known causes			
1/1/2019			
4/1/2019			No excess emissions.
Total	0.00		
e) Unknown causes			
1/1/2019			
4/1/2019			No excess emissions.
Total	0.00		
f) Soot blowing			
1/1/2019			
4/1/2019			No excess emissions.
Total	0.00		
g) Fuel problems			
1/1/2019			
4/1/2019			No excess emissions.
Total	0.00		

CONTINUOUS EMISSION MONITOR DOWNTIME REPORT

REPORTING QUARTER: First, 2019 AOD FILE #: #0203 (AI ID 447)
EMISSION UNIT(S): Heater 10-B-1
POLLUTANT MONITORED: Fuel Gas Flow Rate

DATE/TIME	TOTAL DURATION (HRS)	CAUSE/CORRECTIVE ACTION
a) Monitor malfunction		
Total	<u>0.00</u>	
b) Non-monitor malfunction		
Total	<u>0.00</u>	
c) QA calibration		
Total	<u>0.00</u>	
d) Other known causes		
Total	<u>0.00</u>	
e) Unknown causes		
Total	<u>0.00</u>	

MINNESOTA POLLUTION CONTROL AGENCY

AQD FILE #: #0203 (AI ID 447)

EXCESS EMISSION AND CEM REPORTING FORM

POLLUTANT (circle one): SO2 NOx CO CO2 O2 TRS H2S HCL Opacity

Other: SO2 also a surrogate for MACT Subpart UUU HAP Emissions

REPORTING QUARTER: First, 2019

MONITOR: Advance Limas 11 SO2

MODEL: Magnos 106 - O2

FACILITY: St. Paul Park Refining Co. LLC

MFR: ABB

EMISSION SUBJECT ITEM: EQUI0000000016

EMISSION LIMIT AND AVERAGE TIME: 250 ppm SO2 - 12 hour rolling average

EMISSION UNIT(S): #2 SRU/SCOT unit

EMISSION BASIS:
40 CFR 60 NSPS Subpart J
40 CFR 63.1568 Table 29 Opt 1a MACT Subpart UUU

ASSOCIATED ITEMS: TREA12, COMG8, EQUI166, EQUI167, STRU81

PROCESS UNIT DESCRIPTION: EQUI16 is a Claus Sulfur Recovery Unit with a Tail Gas Treating Unit.
The train includes the SRU Incinerator. The sulfur unit is designed to process 50 LTPD.

TOTAL OPERATING HOURS
OF EMISSION UNIT: 2014

A. EMISSION DATA SUMMARY	B. CEM PERFORMANCE SUMMARY	C. SRU BYPASS INFORMATION
<p>1 DURATION OF EXCESS EMISSIONS (HRS)</p> <p>a) Startup/Shutdown <u>0.00</u></p> <p>b) Control equipment <u>0.00</u></p> <p>c) Process problems <u>0.00</u></p> <p>d) Other known causes <u>0.00</u></p> <p>e) Unknown causes <u>0.00</u></p> <p>f) Soot blowing <u>0.00</u></p> <p>g) Fuel problems <u>0.00</u></p> <p>2 TOTAL DURATION (HRS) <u>0.00</u></p> <p>3 PERCENT OF TOTAL EXCESS EMISSIONS <u>0.00%</u></p>	<p>1 DURATION OF CEM DOWNTIME DURING SOURCE OPERATION (HRS)</p> <p>a) Monitor malfunction <u>0.00</u></p> <p>b) Non-monitor malfunction <u>0.00</u></p> <p>c) QA calibration <u>0.00</u></p> <p>d) Other known causes <u>27.00</u></p> <p>e) Unknown causes <u>0.00</u></p> <p>2 TOTAL DURATION (HRS) <u>27.00</u></p> <p>3 PERCENT OF TOTAL CEM DOWNTIME <u>1.34%</u></p>	<p>1 DURATION OF BYPASS</p> <p>a) Process Problems <u>0.00</u></p> <p>b) Other known causes <u>0.00</u></p> <p>c) Unknown causes <u>0.00</u></p> <p>2 TOTAL DURATION (HRS) <u>0.00</u></p> <p>3 PERCENT OF TOTAL OPERATION HOURS <u>0.00%</u></p>

FOR OPACITY, RECORD ALL TIMES IN MINUTES. FOR GASES, RECORD ALL TIMES IN HOURS.

% Total Excess Emissions = $\frac{\text{Total Duration of Excess Emissions}}{\text{Total Operating Time} - \text{CEM Downtime}}$

% Total CEM Downtime = $\frac{\text{CEM Downtime}}{\text{Total Operating Time}}$

NOTES: Actual monitored values are noted in this section.

During excess emission events, a value equal to 1.5x the high calibration gas concentration is used to replace any analyzer readings over that value since measured data points are not verifiable or accurate when at least 50% greater than the high calibration gas concentration.

If no exceedances: I certify that the required analyses were made, that I am familiar with the results, and that to the best of my knowledge there were no exceedances during the reporting period. I certify that I am familiar with the information in this report and that to the best of my knowledge the information is valid.

SUBMITTED BY: See certification page at front of report DATE: _____

CONTINUOUS EMISSION MONITOR EXCESS EMISSION REPORT

REPORTING QUARTER: First, 2019 AOD FILE #: #0203 (AI ID 447)
EMISSION UNIT(S): #2 SRU/SCOT unit
POLLUTANT MONITORED: SO2 (ppm)

DATE/TIME	TOTAL DURATION (HRS)	MAX. CONCEN. (ppm, 12-hr average) and recal	CAUSE/CORRECTIVE ACTION
a) Startup/Shutdown			
a) Startup/Shutdown			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
b) Control equipment			
b) Control equipment			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
c) Process problems			
c) Process problems			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
d) Other known causes			
d) Other known causes			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
e) Unknown causes			
e) Unknown causes			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
f) Soot blowing			
f) Soot blowing			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
g) Fuel problems			
g) Fuel problems			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		

CONTINUOUS EMISSION MONITOR DOWNTIME REPORT

REPORTING QUARTER: First, 2019 AOD FILE #: #0203 (AI ID 447)
EMISSION UNIT(S): #2 SRU/SCOT unit
POLLUTANT MONITORED: SO2

DATE/TIME	TOTAL DURATION (HRS)	CAUSE/CORRECTIVE ACTION
a) Monitor malfunction		
Total	<u>0.00</u>	
b) Non-monitor malfunction		
Total	<u>0.00</u>	
c) QA calibration		
Total	<u>0.00</u>	
d) Other known causes		
2/25/2019 6:00		
2/26/2019 8:00	26.00	Failed validation; cleaned plugged tubing
2/27/2019 12:00		
2/27/2019 13:00	1.00	Preventative maintenance
Total	<u>27.00</u>	
e) Unknown causes		
Total	<u>0.00</u>	

CONTINUOUS EMISSION MONITOR SRU BYPASS INFORMATION

REPORTING QUARTER: First, 2019 AQD FILE #: #0203 (AI ID 447)

EMISSION UNIT(S): #2 SRU/SCOT unit

POLLUTANT MONITORED: Bypass (Acid gas)

	DATE/TIME	TOTAL DURATION (HRS)	CAUSE/CORRECTIVE ACTION
a) Process problems			
	1/1/2019		
	4/1/2019		No bypasses that resulted in excess emissions.
Total		0.00	
b) Other known causes			
	1/1/2019		
	4/1/2019		No bypasses that resulted in excess emissions.
Total		0.00	
b) Unknown causes			
	1/1/2019		
	4/1/2019		No bypasses that resulted in excess emissions.
Total		0.00	

MINNESOTA POLLUTION CONTROL AGENCY

AQD FILE #: #0203 (AI ID 447)

EXCESS EMISSION AND CEM REPORTING FORM

POLLUTANT (circle one): SO2 NOx CO CO2 O2 TRS H2S HCL Opacity
Other: _____

REPORTING QUARTER: First, 2019

MONITOR Advance Limas 11 SO2
MODEL: Magnos 106 - O2

FACILITY: St. Paul Park Refining Co. LLC

MFR: ABB

EMISSION SUBJECT ITEM: EQUI16

EMISSION LIMIT AND AVERAGE TIME:
45.0 lb SO2/hr - 1 hour average
15.0 lb SO2/hr - 3 hour rolling average

EMISSION UNIT(S): #2 SRU/SCOT unit

EMISSION BASIS: MN Rule 7009.0020 - AAQS/SIP

ASSOCIATED ITEMS: TREA12, COMG8, EQUI166, EQUI167, STRU14

TOTAL OPERATING HOURS

OF EMISSION UNIT: 2014

A. EMISSION DATA SUMMARY

1 DURATION OF EXCESS EMISSIONS (HRS)

	1 hr	3 hr
a) Startup/Shutdown	0.00	0.00
b) Control equipment	0.00	0.00
c) Process problems	0.00	0.00
d) Other known causes	0.00	0.00
e) Unknown causes	0.00	0.00
f) Soot blowing	0.00	0.00
g) Fuel problems	0.00	0.00
2 TOTAL DURATION (HRS)	0.00	0.00
3 PERCENT OF TOTAL EXCESS EMISSIONS	0.00%	0.00%

B. CEM PERFORMANCE SUMMARY

1 DURATION OF CEM DOWNTIME DURING SOURCE OPERATION (HRS)

a) Monitor malfunction	0.00
b) Non-monitor malfunction	0.00
c) QA calibration	0.00
d) Other known causes	27.00
e) Unknown causes	0.00

2 TOTAL DURATION (HRS) 27.00

3 PERCENT OF TOTAL CEM DOWNTIME 1.34%

FOR OPACITY, RECORD ALL TIMES IN MINUTES. FOR GASES, RECORD ALL TIMES IN HOURS.

% Total Excess Emissions = Total Duration of Excess Emissions / (Total Operating Time - CEM Downtime)

% Total CEM Downtime = CEM Downtime / Total Operating Time

NOTE:

1b/hr SO2 CEM downtime same as reported for #2 SRU/SCOT (EU 019) SO2 ppm

If no exceedances: I certify that the required analyses were made, that I am familiar with the results, and that to the best of my knowledge there were no exceedances during the reporting period. I certify that I am familiar with the information in this report and that to the best of my knowledge the information is valid.

SUBMITTED BY: See certification page at front of report

DATE: _____

CONTINUOUS EMISSION MONITOR EXCESS EMISSION REPORT

REPORTING QUARTER: First, 2019 AQD FILE #: #0203 (AI ID 447)

EMISSION UNIT(S): #2 SRU/SCOT unit

POLLUTANT MONITORED: SO2 (lbs/hr)

DATE/TIME	TOTAL DURATION (HRS)	MAX. CONCEN. (lbs/hr, 1-hr average) and ppm recalcd	CAUSE/CORRECTIVE ACTION
a) Startup/Shutdown			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
b) Control equipment			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
c) Process problems			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
d) Other known causes			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
e) Unknown causes			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
f) Soot blowing			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
g) Fuel problems			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		

EXCESS EMISSION REPORT

REPORTING QUARTER: First, 2019 AOD FILE #: #0203 (AI ID 447)
 EMISSION UNIT(S): #2 SRU/SCOT unit
 POLLUTANT MONITORED: SO2 (lbs/hr)

DATE/TIME	TOTAL DURATION (HRS)	MAX. CONCEN. (lbs/hr, 3-hr average)	CAUSE/CORRECTIVE ACTION
a) Startup/Shutdown			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
b) Control equipment			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
c) Process problems			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
d) Other known causes			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
e) Unknown causes			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
f) Soot blowing			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
g) Fuel problems			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		

CONTINUOUS EMISSION MONITOR DOWNTIME REPORT

REPORTING QUARTER: First, 2019

AQD FILE #: #0203 (AI ID 447)

EMISSION UNIT(S): #2 SRU/SCOT unit

POLLUTANT MONITORED: SO2 (lbs/hr)

DATE/TIME	TOTAL DURATION (HRS)	CAUSE/CORRECTIVE ACTION
SO2 lb/hr downtime same as reported for #2 SRU/SCOT (EU 019) SO2 ppm		
a) Monitor malfunction		
Total	<u>0.00</u>	See #2 SCOT ppm page for details
b) Non-monitor malfunction		
Total	<u>0.00</u>	See #2 SCOT ppm page for details
c) QA calibration		
Total	<u>0.00</u>	See #2 SCOT ppm page for details
d) Other known causes		
Total	<u>27.00</u>	See #2 SCOT ppm page for details
e) Unknown causes		
Total	<u>0.00</u>	See #2 SCOT ppm page for details

MINNESOTA POLLUTION CONTROL AGENCY

AQD FILE #: #0203 (AI ID 447)

EXCESS EMISSION AND CEM REPORTING FORM

POLLUTANT (circle one): SO₂ NO_x CO CO₂ O₂ TRS H₂S HCL Opacity

Other:

flow

REPORTING QUARTER: First, 2019

MONITOR

MODEL: Fuel Gas Flow Rate/FG H₂S CEM

FACILITY:

St. Paul Park Refining Co. LLC

MFR:

EMISSION LIMITS AND AVERAGING TIME:

1.70 lb SO₂/hr - 3 hour rolling average

1.75 lb SO₂/mmBtu - 3 hour rolling avg.

EMISSION SUBJECT ITEM: EQUI17

EMISSION UNIT(S): Guard Case Reactor Heater

36-B-1

EMISSION BASIS: SIP for SO₂ NAAQS

ASSOCIATED ITEMS: COMG9, COMG7, EQUI163, EQUI199, STRU62

TOTAL OPERATING HOURS

OF EMISSION UNIT: 1995

A. EMISSION DATA SUMMARY

1 DURATION OF EXCESS EMISSIONS (HRS)

	lb/hr	lb/mmBtu
a) Startup/Shutdown	0.00	0.00
b) Control equipment	0.00	0.00
c) Process problems	0.00	0.00
d) Other known causes	0.00	0.00
e) Unknown causes	0.00	0.00
f) Soot blowing	0.00	0.00
g) Fuel problems	0.00	0.00
2 TOTAL DURATION (HRS)	0.00	0.00
3 PERCENT OF TOTAL EXCESS EMISSIONS	0.00%	0.00%

B. CEM PERFORMANCE SUMMARY

1 DURATION OF CEM DOWNTIME DURING SOURCE OPERATION (HRS)

a) Monitor malfunction	0.00
b) Non-monitor malfunction	0.00
c) QA calibration	0.00
d) Other known causes	0.00
e) Unknown causes	0.00
2 TOTAL DURATION (HRS)	0.00
3 PERCENT OF TOTAL CEM DOWNTIME	0.00%

FOR OPACITY, RECORD ALL TIMES IN MINUTES. FOR GASES, RECORD ALL TIMES IN HOURS.

% Total Excess Emissions = $\frac{\text{Total Duration of Excess Emissions}}{\text{Total Operating Time} - \text{CEM Downtime}}$

% Total CEM Downtime = $\frac{\text{CEM Downtime}}{\text{Total Operating Time}}$

NOTES:

If no exceedances: I certify that the required analyses were made, that I am familiar with the results, and that to the best of my knowledge there were no exceedances during the reporting period. I certify that I am familiar with the information in this report and that to the best of my knowledge the information is valid.

SUBMITTED BY: See certification page at front of report

DATE: _____

CONTINUOUS EMISSION MONITOR EXCESS EMISSION REPORT

REPORTING QUARTER: First, 2019

AQD FILE #: #0203 (AI ID 447)

EMISSION UNIT(S): 36-B-1

POLLUTANT MONITORED: S02 - lb/hr

DATE/TIME	TOTAL DURATION (HRS)	MAX. CONCENTRATION	CAUSE/CORRECTIVE ACTION
a) Startup/Shutdown			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
b) Control equipment			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
c) Process problems			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
d) Other known causes			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
e) Unknown causes			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
f) Soot blowing			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
g) Fuel problems			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		

CONTINUOUS EMISSION MONITOR EXCESS EMISSION REPORT

REPORTING QUARTER: First, 2019 AQD FILE #: #0203 (AI ID 447)
 EMISSION UNIT(S): 36-B-1
 POLLUTANT MONITORED: S02 - lb/mmbtu

DATE/TIME	TOTAL DURATION (HRS)	MAX. CONCENTRATION	CAUSE/CORRECTIVE ACTION
a) Startup/Shutdown			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
b) Control equipment			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
c) Process problems			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
d) Other known causes			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
e) Unknown causes			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
f) Soot blowing			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
g) Fuel problems			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		

**CONTINUOUS EMISSION MONITOR
DOWNTIME REPORT**

REPORTING QUARTER: First, 2019

AQD FILE #: #0203 (AI ID 447)

EMISSION UNIT(S): 36-B-1 Fuel Gas Flow Rate

POLLUTANT MONITORED: S02

DATE/TIME	TOTAL DURATION (HRS)	CAUSE/CORRECTIVE ACTION
a) Monitor malfunction		
Total	<u>0.00</u>	
b) Non-monitor malfunction		
Total	<u>0.00</u>	
c) QA calibration		
Total	<u>0.00</u>	
d) Other known causes		
Total	<u>0.00</u>	
e) Unknown causes		
Total	<u>0.00</u>	

MINNESOTA POLLUTION CONTROL AGENCY

AQD FILE #: #0203 (AI ID 447)

EXCESS EMISSION AND CEM REPORTING FORM

POLLUTANT (circle one): SO₂ NO_x CO CO₂ O₂ TRS H₂S HCL Opacity
 Other: Flow

REPORTING QUARTER: First, 2019 MONITOR
 MODEL: Fuel Gas Flow Rate/FG H₂S CEM

FACILITY: MFR: _____
 St. Paul Park Refining Co. LLC

EMISSION SUBJECT ITEM: EQUI19 EMISSION LIMITS AND AVERAGING TIME:
 0.63 lb SO₂/hr - 3 hour rolling avg.
 1.75 lb SO₂/mmbtu - 3 hour rolling avg.

EMISSION UNIT(S): Reactor Charge Heater EMISSION BASIS: SIP for SO₂ NAAQS
 36-B-6E

ASSOCIATED ITEMS: COMG9, COMG7, EQUI163, EQUI201, STRU80

TOTAL OPERATING HOURS
 OF EMISSION UNIT: 1987

A. EMISSION DATA SUMMARY			B. CEM PERFORMANCE SUMMARY	
1 DURATION OF EXCESS EMISSIONS (HRS)			1 DURATION OF CEM DOWNTIME DURING SOURCE OPERATION (HRS)	
	lb/hr	lb/mmbtu		
a) Startup/Shutdown	0.00	0.00	a) Monitor malfunction	0.00
b) Control equipment	0.00	0.00	b) Non-monitor malfunction	0.00
c) Process problems	0.00	0.00	c) QA calibration	1.00
d) Other known causes	0.00	0.00	d) Other known causes	0.00
e) Unknown causes	0.00	0.00	e) Unknown causes	0.00
f) Soot blowing	0.00	0.00		
g) Fuel problems	0.00	0.00		
2 TOTAL DURATION (HRS)	0.00	0.00	2 TOTAL DURATION (HRS)	1.00
3 PERCENT OF TOTAL EXCESS EMISSIONS	0.00%	0.00%	3 PERCENT OF TOTAL CEM DOWNTIME	0.05%

FOR OPACITY, RECORD ALL TIMES IN MINUTES. FOR GASES, RECORD ALL TIMES IN HOURS.

% Total Excess Emissions = Total Duration of Excess Emissions / (Total Operating Time - CEM Downtime)
 % Total CEM Downtime = CEM Downtime / Total Operating Time

NOTES: _____

If no exceedances: I certify that the required analyses were made, that I am familiar with the results, and that to the best of my knowledge there were no exceedances during the reporting period. I certify that I am familiar with the information in this report and that to the best of my knowledge the information is valid.

SUBMITTED BY: See certification page at front of report DATE: _____

CONTINUOUS EMISSION MONITOR EXCESS EMISSION REPORT

REPORTING QUARTER: First, 2019

AQD FILE #: #0203 (AI ID 447)

EMISSION UNIT(S): 36-B-6E

POLLUTANT MONITORED: S02 - lb/hr

DATE/TIME	TOTAL DURATION (HRS)	MAX. CONCENTRATION	CAUSE/CORRECTIVE ACTION
a) Startup/Shutdown			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
b) Control equipment			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
c) Process problems			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
d) Other known causes			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
e) Unknown causes			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
f) Soot blowing			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
g) Fuel problems			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		

CONTINUOUS EMISSION MONITOR EXCESS EMISSION REPORT

REPORTING QUARTER: First, 2019

AQD FILE #: #0203 (AI ID 447)

EMISSION UNIT(S): 36-B-6E

POLLUTANT MONITORED: S02 - lb/mmbtu

DATE/TIME	TOTAL DURATION (HRS)	MAX. CONCENTRATION	CAUSE/CORRECTIVE ACTION
a) Startup/Shutdown			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
b) Control equipment			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
c) Process problems			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
d) Other known causes			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
e) Unknown causes			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
f) Soot blowing			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
g) Fuel problems			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		

CONTINUOUS EMISSION MONITOR DOWNTIME REPORT

REPORTING QUARTER: First, 2019 AQD FILE #: #0203 (AI ID 447)
 EMISSION UNIT(S): 3-B-6E Fuel Gas Flow Rate
 POLLUTANT MONITORED: S02

DATE/TIME	TOTAL DURATION (HRS)	CAUSE/CORRECTIVE ACTION
a) Monitor malfunction		
Total	<u>0.00</u>	
b) Non-monitor malfunction		
Total	<u>0.00</u>	
c) QA calibration		
2/13/2019 13:00		
2/13/2019 14:00	<u>1.00</u>	Annual meter calibration
Total	<u>1.00</u>	
d) Other known causes		
Total	<u>0.00</u>	
e) Unknown causes		
Total	<u>0.00</u>	

MINNESOTA POLLUTION CONTROL AGENCY

AQD FILE # #0203 (AI ID 447)

EXCESS EMISSION AND CEM REPORTING FORM

POLLUTANT (circle one): SO₂ NO_x CO CO₂ O₂ TRS H₂S HCL Opacity

Other:

Flow _____

REPORTING QUARTER: First, 2019

MONITOR

MODEL: Fuel Gas Flow Rate/FG H₂S CEM

FACILITY:

St. Paul Park Refining Co. LLC

MFR: _____

EMISSION SUBJECT ITEM: EQUI18

EMISSION LIMITS AND AVERAGING TIME:

2.10 lb SO₂/hr - 3 hour rolling average

1.75 lb SO₂/mmBtu - 3 hour rolling avg.

EMISSION UNIT(S): Reactor Charge Heater

36-B-2,3,4

EMISSION BASIS: SIP for SO₂ NAAQS

ASSOCIATED ITEMS: COMG9, COMG7, EQUI163, EQUI200, STRU12

TOTAL OPERATING HOURS

OF EMISSION UNIT: 1986

A. EMISSION DATA SUMMARY			B. CEM PERFORMANCE SUMMARY	
1 DURATION OF EXCESS EMISSIONS (HRS)			1 DURATION OF CEM DOWNTIME DURING SOURCE OPERATION (HRS)	
	lb/hr	lb/mmBtu		
a) Startup/Shutdown	0.00	0.00	a) Monitor malfunction	0.00
b) Control equipment	0.00	0.00	b) Non-monitor malfunction	0.00
c) Process problems	0.00	0.00	c) QA calibration	0.00
d) Other known causes	0.00	0.00	d) Other known causes	0.00
e) Unknown causes	0.00	0.00	e) Unknown causes	0.00
f) Soot blowing	0.00	0.00		
g) Fuel problems	0.00	0.00		
2 TOTAL DURATION (HRS)	0.00	0.00	2 TOTAL DURATION (HRS)	0.00
3 PERCENT OF TOTAL EXCESS EMISSIONS	0.00%	0.00%	3 PERCENT OF TOTAL CEM DOWNTIME	0.00%

FOR OPACITY, RECORD ALL TIMES IN MINUTES. FOR GASES, RECORD ALL TIMES IN HOURS.

% Total Excess Emissions = $\frac{\text{Total Duration of Excess Emissions}}{\text{Total Operating Time} - \text{CEM Downtime}}$

% Total CEM Downtime = $\frac{\text{CEM Downtime}}{\text{Total Operating Time}}$

NOTES: _____

If no exceedances: I certify that the required analyses were made, that I am familiar with the results, and that to the best of my knowledge there were no exceedances during the reporting period. I certify that I am familiar with the information in this report and that to the best of my knowledge the information is valid.

SUBMITTED BY: See certification page at front of report

DATE: _____

CONTINUOUS EMISSION MONITOR EXCESS EMISSION REPORT

REPORTING QUARTER: First, 2019 AQD FILE #: #0203 (AI ID 447)

EMISSION UNIT(S): 36-B-2, 3, 4

POLLUTANT MONITORED: S02 - lb/hr

DATE/TIME	TOTAL DURATION (HRS)	MAX. CONCENTRATION	CAUSE/CORRECTIVE ACTION
a) Startup/Shutdown			
1/1/2019			
4/1/2019			No excess emissions.
Total	0.00		
b) Control equipment			
1/1/2019			
4/1/2019			No excess emissions.
Total	0.00		
c) Process problems			
1/1/2019			
4/1/2019			No excess emissions.
Total	0.00		
d) Other known causes			
1/1/2019			
4/1/2019			No excess emissions.
Total	0.00		
e) Unknown causes			
1/1/2019			
4/1/2019			No excess emissions.
Total	0.00		
f) Soot blowing			
1/1/2019			
4/1/2019			No excess emissions.
Total	0.00		
g) Fuel problems			
1/1/2019			
4/1/2019			No excess emissions.
Total	0.00		

CONTINUOUS EMISSION MONITOR EXCESS EMISSION REPORT

REPORTING QUARTER: First, 2019 AQD FILE #: #0203 (AI ID 447)

EMISSION UNIT(S): 36-B-2, 3, 4

POLLUTANT MONITORED: S02 - lb/mmbtu

DATE/TIME	TOTAL DURATION (HRS)	MAX. CONCENTRATION	CAUSE/CORRECTIVE ACTION
a) Startup/Shutdown			
1/1/2019			
4/1/2019			No excess emissions.
Total	0.00		
b) Control equipment			
1/1/2019			
4/1/2019			No excess emissions.
Total	0.00		
c) Process problems			
1/1/2019			
4/1/2019			No excess emissions.
Total	0.00		
d) Other known causes			
1/1/2019			
4/1/2019			No excess emissions.
Total	0.00		
e) Unknown causes			
1/1/2019			
4/1/2019			No excess emissions.
Total	0.00		
f) Soot blowing			
1/1/2019			
4/1/2019			No excess emissions.
Total	0.00		
g) Fuel problems			
1/1/2019			
4/1/2019			No excess emissions.
Total	0.00		

**CONTINUOUS EMISSION MONITOR
DOWNTIME REPORT**

REPORTING QUARTER: First, 2019 AQD FILE #: #0203 (AI ID 447)
EMISSION UNIT(S): 36-B-2,3,4 Fuel Gas Flow Rate
POLLUTANT MONITORED: S02

DATE/TIME	TOTAL DURATION (HRS)	CAUSE/CORRECTIVE ACTION
a) Monitor malfunction		
Total	<u>0.00</u>	
b) Non-monitor malfunction		
Total	<u>0.00</u>	
c) QA calibration		
Total	<u>0.00</u>	
d) Other known causes		
Total	<u>0.00</u>	
e) Unknown causes		
Total	<u>0.00</u>	

MINNESOTA POLLUTION CONTROL AGENCY

AQD FILE #: #0203 (AI ID 447)

EXCESS EMISSION AND CEM REPORTING FORM

POLLUTANT (circle one): SO₂ NO_x CO CO₂ O₂ TRS H₂S HCL Opacity

Other:

Flow

REPORTING QUARTER: First, 2019

MONITOR

MODEL: Fuel Gas Flow Rate/FG H₂S CEM

FACILITY:

St. Paul Park Refining Co. LLC

MFR:

EMISSION SUBJECT ITEM: EQUI20

EMISSION LIMITS AND AVERAGING TIME:

1.05 lb SO₂/hr - 3 hour rolling average

1.75 lb SO₂/mmbtu - 3 hour rolling avg.

EMISSION UNIT(S): Reactor Charge Heaters

36-B-6W

EMISSION BASIS:

SIP for SO₂ NAAQS

ASSOCIATED ITEMS: COMG9, COMG7, EQUI163, EQUI202, STRU79

TOTAL OPERATING HOURS

OF EMISSION UNIT: 1988

A. EMISSION DATA SUMMARY

1 DURATION OF EXCESS EMISSIONS (HRS)

	lb/hr	lb/mmbtu
a) Startup/Shutdown	0.00	0.00
b) Control equipment	0.00	0.00
c) Process problems	0.00	0.00
d) Other known causes	0.00	0.00
e) Unknown causes	0.00	0.00
f) Soot blowing	0.00	0.00
g) Fuel problems	0.00	0.00

2 TOTAL DURATION (HRS)

0.00 0.00

3 PERCENT OF TOTAL

EXCESS EMISSIONS

0.00% 0.00%

B. CEM PERFORMANCE SUMMARY

1 DURATION OF CEM DOWNTIME DURING SOURCE OPERATION (HRS)

a) Monitor malfunction	0.00
b) Non-monitor malfunction	0.00
c) QA calibration	2.00
d) Other known causes	0.00
e) Unknown causes	0.00

2 TOTAL DURATION (HRS)

2.00

3 PERCENT OF TOTAL

CEM DOWNTIME

0.10%

FOR OPACITY, RECORD ALL TIMES IN MINUTES. FOR GASES, RECORD ALL TIMES IN HOURS.

% Total Excess Emissions =

Total Duration of Excess Emissions / (Total Operating Time - CEM Downtime)

% Total CEM Downtime =

CEM Downtime / Total Operating Time

NOTES:

If no exceedances: I certify that the required analyses were made, that I am familiar with the results, and that to the best of my knowledge there were no exceedances during the reporting period. I certify that I am familiar with the information in this report and that to the best of my knowledge the information is valid.

SUBMITTED BY: See certification page at front of report

DATE:

CONTINUOUS EMISSION MONITOR EXCESS EMISSION REPORT

REPORTING QUARTER: First, 2019 AQD FILE #: #0203 (AI ID 447)
 EMISSION UNIT(S): 36-B-6W
 POLLUTANT MONITORED: S02 - lb/hr

DATE/TIME	TOTAL DURATION (HRS)	MAX. CONCENTRATION	CAUSE/CORRECTIVE ACTION
a) Startup/Shutdown			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
b) Control equipment			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
c) Process problems			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
d) Other known causes			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
e) Unknown causes			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
f) Soot blowing			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
g) Fuel problems			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		

CONTINUOUS EMISSION MONITOR EXCESS EMISSION REPORT

REPORTING QUARTER: First, 2019 AQD FILE #: #0203 (AI ID 447)
 EMISSION UNIT(S): 36-B-6W
 POLLUTANT MONITORED: S02 - lb/mmBtu

DATE/TIME	TOTAL DURATION (HRS)	MAX. CONCENTRATION	CAUSE/CORRECTIVE ACTION
a) Startup/Shutdown			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
b) Control equipment			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
c) Process problems			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
d) Other known causes			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
e) Unknown causes			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
f) Soot blowing			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
g) Fuel problems			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		

CONTINUOUS EMISSION MONITOR DOWNTIME REPORT

REPORTING QUARTER: First, 2019 AQD FILE #: #0203 (AI ID 447)

EMISSION UNIT(S): 36-B-6W Fuel Gas Flow Rate

POLLUTANT MONITORED: S02

DATE/TIME	TOTAL DURATION (HRS)	CAUSE/CORRECTIVE ACTION
a) Monitor malfunction		
Total	<u>0.00</u>	
b) Non-monitor malfunction		
Total	<u>0.00</u>	
c) QA calibration		
2/13/2019 9:00		
2/13/2019 11:00	<u>2.00</u>	Annual meter calibration.
Total	<u>2.00</u>	
d) Other known causes		
Total	<u>0.00</u>	
e) Unknown causes		
Total	<u>0.00</u>	

MINNESOTA POLLUTION CONTROL AGENCY

AQD FILE #: #0203 (AI ID 447)

EXCESS EMISSION AND CEM REPORTING FORM

POLLUTANT (circle one): SO₂ NO_x CO CO₂ O₂ TRS H₂S HCL Opacity

Other: Flow

REPORTING QUARTER: First, 2019

MONITOR

MODEL: Fuel Gas Flow Rate/FG H₂S CEM

FACILITY:

St. Paul Park Refining Co. LLC

MFR: _____

EMISSION SUBJECT ITEM: EQUI21

EMISSION LIMITS AND AVERAGING TIME:

1.38 lb SO₂/hr - 3 hour rolling avg.

1.75 lb SO₂/mmbtu - 3 hour rolling avg.

EMISSION UNIT(S): Reactor Charge Heater

37-B-1

EMISSION BASIS: SIP for SO₂ NAAQS

ASSOCIATED ITEMS: TREA20, TREA21, COMG7, COMG8, EQUI163, EQUI203, STRU89

TOTAL OPERATING HOURS

OF EMISSION UNIT: 2160

A. EMISSION DATA SUMMARY			B. CEM PERFORMANCE SUMMARY	
1 DURATION OF EXCESS EMISSIONS (HRS)			1 DURATION OF CEM DOWNTIME DURING SOURCE OPERATION (HRS)	
	lb/hr	lb/mmbtu		
a) Startup/Shutdown	0.00	0.00	a) Monitor malfunction	0.00
b) Control equipment	0.00	0.00	b) Non-monitor malfunction	0.00
c) Process problems	0.00	0.00	c) QA calibration	0.00
d) Other known causes	0.00	0.00	d) Other known causes	1.00
e) Unknown causes	0.00	0.00	e) Unknown causes	0.00
f) Soot blowing	0.00	0.00		
g) Fuel problems	0.00	0.00		
2 TOTAL DURATION (HRS)	0.00	0.00	2 TOTAL DURATION (HRS)	1.00
3 PERCENT OF TOTAL EXCESS EMISSIONS	0.00%	0.00%	3 PERCENT OF TOTAL CEM DOWNTIME	0.05%

FOR OPACITY, RECORD ALL TIMES IN MINUTES. FOR GASES, RECORD ALL TIMES IN HOURS.

% Total Excess Emissions = $\frac{\text{Total Duration of Excess Emissions}}{(\text{Total Operating Time} - \text{CEM Downtime})}$

% Total CEM Downtime = $\frac{\text{CEM Downtime}}{\text{Total Operating Time}}$

NOTES: _____

If no exceedances: I certify that the required analyses were made, that I am familiar with the results, and that to the best of my knowledge there were no exceedances during the reporting period. I certify that I am familiar with the information in this report and that to the best of my knowledge the information is valid.

SUBMITTED BY: See certification page at front of report

DATE: _____

CONTINUOUS EMISSION MONITOR EXCESS EMISSION REPORT

REPORTING QUARTER: First, 2019 AQD FILE #: #0203 (AI ID 447)

EMISSION UNIT(S): 37-B-1

POLLUTANT MONITORED: S02 - lb/hr

DATE/TIME	TOTAL DURATION (HRS)	MAX. CONCENTRATION	CAUSE/CORRECTIVE ACTION
a) Startup/Shutdown			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
b) Control equipment			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
c) Process problems			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
d) Other known causes			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
e) Unknown causes			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
f) Soot blowing			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
g) Fuel problems			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		

CONTINUOUS EMISSION MONITOR EXCESS EMISSION REPORT

REPORTING QUARTER: First, 2019 AQD FILE #: #0203 (AI ID 447)

EMISSION UNIT(S): 37-B-1

POLLUTANT MONITORED: S02 - lb/mmbtu

DATE/TIME	TOTAL DURATION (HRS)	MAX. CONCENTRATION	CAUSE/CORRECTIVE ACTION
a) Startup/Shutdown			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
b) Control equipment			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
c) Process problems			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
d) Other known causes			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
e) Unknown causes			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
f) Soot blowing			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
g) Fuel problems			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		

CONTINUOUS EMISSION MONITOR DOWNTIME REPORT

REPORTING QUARTER: First, 2019 AQD FILE #: #0203 (AI ID 447)

EMISSION UNIT(S): 37-B-1 Fuel Gas Flow Rate

POLLUTANT MONITORED: S02

DATE/TIME	TOTAL DURATION (HRS)	CAUSE/CORRECTIVE ACTION
a) Monitor malfunction		
Total	<u>0.00</u>	
b) Non-monitor malfunction		
Total	<u>0.00</u>	
c) QA calibration		
Total	<u>0.00</u>	
d) Other known causes		
1/1/19 10:00		
1/1/19 11:00	<u>1.00</u>	Communications error
Total	<u>1.00</u>	
e) Unknown causes		
Total	<u>0.00</u>	

MINNESOTA POLLUTION CONTROL AGENCY

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AQD FILE #: #0203 (AI ID 447)

EXCESS EMISSION AND CEM REPORTING FORM

POLLUTANT (circle one): SO2 NOx CO CO2 O2 TRS H2S HCL Opacity

Other: _____

REPORTING QUARTER: First, 2019

MONITOR

MODEL: Fuel Gas Flow Rate/FG H2S CEM

FACILITY:

St. Paul Park Refining Co. LLC

MFR: _____

EMISSION SUBJECT ITEM: EQUI26

EMISSION LIMITS AND AVERAGING TIME:

0.78 lb SO2/hr - 3 hour rolling avg.

1.75 lb SO2/mmbtu - 3 hour rolling avg.

EMISSION UNIT(S): Product Stripper Reboiler

37-B-2

EMISSION BASIS: SIP for SO2 NAAQS

ASSOCIATED ITEMS: TREA22, TREA23, COMG7, COMG8, EQUI163, EQUI204, STRU88

TOTAL OPERATING HOURS

OF EMISSION UNIT: 2160

A. EMISSION DATA SUMMARY			B. CEM PERFORMANCE SUMMARY	
1 DURATION OF EXCESS EMISSIONS (HRS)			1 DURATION OF CEM DOWNTIME DURING SOURCE OPERATION (HRS)	
	lb/hr	lb/mmbtu		
a) Startup/Shutdown	0.00	0.00	a) Monitor malfunction	0.00
b) Control equipment	0.00	0.00	b) Non-monitor malfunction	0.00
c) Process problems	0.00	0.00	c) QA calibration	0.00
d) Other known causes	0.00	0.00	d) Other known causes	0.00
e) Unknown causes	0.00	0.00	e) Unknown causes	0.00
f) Soot blowing	0.00	0.00		
g) Fuel problems	0.00	0.00		
2 TOTAL DURATION (HRS)	0.00	0.00	2 TOTAL DURATION (HRS)	0.00
3 PERCENT OF TOTAL EXCESS EMISSIONS	0.00%	0.00%	3 PERCENT OF TOTAL CEM DOWNTIME	0.00%

FOR OPACITY, RECORD ALL TIMES IN MINUTES. FOR GASES, RECORD ALL TIMES IN HOURS.

% Total Excess Emissions = $\frac{\text{Total Duration of Excess Emissions}}{\text{Total Operating Time} - \text{CEM Downtime}}$

% Total CEM Downtime = $\frac{\text{CEM Downtime}}{\text{Total Operating Time}}$

NOTES:

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SUBMITTED BY: See certification page at front of report

DATE: _____

CONTINUOUS EMISSION MONITOR EXCESS EMISSION REPORT

REPORTING QUARTER: First, 2019 AOD FILE #: #0203 (AI ID 447)
EMISSION UNIT(S): 37-B-2
POLLUTANT MONITORED: S02 - lb/hr

DATE/TIME	TOTAL DURATION (HRS)	MAX. CONCENTRATION	CAUSE/CORRECTIVE ACTION
a) Startup/Shutdown			
1/1/2019			
4/1/2019			No excess emissions.
Total	0.00		
b) Control equipment			
1/1/2019			
4/1/2019			No excess emissions.
Total	0.00		
c) Process problems			
1/1/2019			
4/1/2019			No excess emissions.
Total	0.00		
d) Other known causes			
1/1/2019			
4/1/2019			No excess emissions.
Total	0.00		
e) Unknown causes			
1/1/2019			
4/1/2019			No excess emissions.
Total	0.00		
f) Soot blowing			
1/1/2019			
4/1/2019			No excess emissions.
Total	0.00		
g) Fuel problems			
1/1/2019			
4/1/2019			No excess emissions.
Total	0.00		

CONTINUOUS EMISSION MONITOR EXCESS EMISSION REPORT

REPORTING QUARTER: First, 2019 AQD FILE #: #0203 (AI ID 447)
 EMISSION UNIT(S): 37-B-2
 POLLUTANT MONITORED: S02 - lb/mmbtu

DATE/TIME	TOTAL DURATION (HRS)	MAX. CONCENTRATION	CAUSE/CORRECTIVE ACTION
a) Startup/Shutdown			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
b) Control equipment			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
c) Process problems			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
d) Other known causes			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
e) Unknown causes			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
f) Soot blowing			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
g) Fuel problems			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		

CONTINUOUS EMISSION MONITOR DOWNTIME REPORT

REPORTING QUARTER: First, 2019 AQD FILE #: #0203 (AI ID 447)

EMISSION UNIT(S): 37-B-2 Fuel Gas Flow Rate

POLLUTANT MONITORED: S02

DATE/TIME	TOTAL DURATION (HRS)	CAUSE/CORRECTIVE ACTION
a) Monitor malfunction		
Total	<u>0.00</u>	
b) Non-monitor malfunction		
Total	<u>0.00</u>	
c) QA calibration		
Total	<u>0.00</u>	
d) Other known causes		
Total	<u>0.00</u>	
e) Unknown causes		
Total	<u>0.00</u>	

MINNESOTA POLLUTION CONTROL AGENCY

AQD FILE #: #0203 (AI ID 447)

EXCESS EMISSION AND CEM REPORTING FORM

POLLUTANT (circle one): SO₂ NO_x CO CO₂ O₂ TRS H₂S HCL Opacity

Other: Flow

REPORTING QUARTER: First, 2019

MONITOR

MODEL: Fuel Gas Flow Rate/FG H₂S CEM

FACILITY:

St. Paul Park Refining Co. LLC

MFR: _____

EMISSION SUBJECT ITEM: COM0000000026, , EQUI24

EMISSION LIMIT AND AVERAGE TIME:

3.48 lb SO₂/hr - 3 hour rolling average

1.75 lb SO₂/mmbtu - 3 hour rolling avg.

EMISSION UNIT(S): Hydrogen Plant Heaters

38-B-1, 38-B-2

EMISSION BASIS:

SIP for SO₂ NAAQS

ASSOCIATED ITEMS: TREA16, TREA11, EQUI24, EQUI163, EQUI208, EQUI205, EQUI162, STRU87

OPERATING HOURS OF EMISSION UNIT:

Total	Nat Gas	PSA Gas
2160	2160	2160

A. EMISSION DATA SUMMARY

DURATION OF EXCESS EMISSIONS (HRS)

	lb/mmbtu	lb/hr
1		
a) Startup/Shutdown	0.00	0.00
b) Control equipment	0.00	0.00
c) Process problems	0.00	0.00
d) Other known causes	0.00	0.00
e) Unknown causes	0.00	0.00
f) Soot blowing	0.00	0.00
g) Fuel problems	0.00	0.00
2 TOTAL DURATION (HRS)	0.00	0.00
3 PERCENT OF TOTAL EXCESS EMISSIONS	0.00%	0.00%

B. CEM Performance Summary

1 DURATION OF CEM DOWNTIME DURING SOURCE OPERATION (HRS)

	Nat Gas	PSA Gas
a) Monitor malfunction	0.00	0.00
b) Non-monitor malfunction	0.00	0.00
c) QA calibration	0.00	0.00
d) Other known causes	0.00	0.00
e) Unknown causes	0.00	0.00
2 TOTAL DURATION (HRS)	0.00	0.00
3 PERCENT OF TOTAL CEM DOWNTIME	0.00%	0.00%

FOR OPACITY, RECORD ALL TIMES IN MINUTES. FOR GASES, RECORD ALL TIMES IN HOURS.

% Total Excess Emissions = Total Duration of Excess Emissions / (Total Operating Time - CEM Downtime)

% Total CEM Downtime = CEM Downtime / Total Operating Time

NOTES: _____

If no exceedances: I certify that the required analyses were made, that I am familiar with the results, and that to the best of my knowledge there were no exceedances during the reporting period. I certify that I am familiar with the information in this report and that to the best of my knowledge the information is valid.

SUBMITTED BY: See certification page at front of report

DATE: _____

CONTINUOUS EMISSION MONITOR EXCESS EMISSION REPORT

REPORTING QUARTER: First, 2019 AQR FILE #: #0203 (AI ID 447)

EMISSION UNIT(S): 38-B-1, 38-B-2

POLLUTANT MONITORED: SO2 lb/mmbtu

DATE/TIME	TOTAL DURATION (HRS)	MAX. CONCENTRATION	CAUSE/CORRECTIVE ACTION
a) Startup/Shutdown			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
b) Control equipment			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
c) Process problems			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
d) Other known causes			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
e) Unknown causes			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
f) Soot blowing			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
g) Fuel problems			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		

CONTINUOUS EMISSION MONITOR EXCESS EMISSION REPORT

REPORTING QUARTER: First, 2019 AQD FILE #: #0203 (AI ID 447)
 EMISSION UNIT(S): 38-B-1, 38-B-2
 POLLUTANT MONITORED: SO2 lb/hr

DATE/TIME	TOTAL DURATION (HRS)	MAX. CONCENTRATION	CAUSE/CORRECTIVE ACTION
a) Startup/Shutdown			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
b) Control equipment			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
c) Process problems			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
d) Other known causes			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
e) Unknown causes			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
f) Soot blowing			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
g) Fuel problems			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		

CONTINUOUS EMISSION MONITOR DOWNTIME REPORT

REPORTING QUARTER: First, 2019 AQD FILE #: #0203 (AI ID 447)

EMISSION UNIT(S): 38-B-1, 38-B-2

POLLUTANT MONITORED: Nat Gas Flow Rate

DATE/TIME	TOTAL DURATION (HRS)	CAUSE/CORRECTIVE ACTION
a) Monitor malfunction		
Total	<u>0.00</u>	
b) Non-monitor malfunction		
Total	<u>0.00</u>	
c) QA calibration		
Total	<u>0.00</u>	
d) Other known causes		
Total	<u>0.00</u>	
e) Unknown causes		
Total	<u>0.00</u>	

**CONTINUOUS EMISSION MONITOR
DOWNTIME REPORT**

REPORTING QUARTER: First, 2019 AQD FILE #: #0203 (AI ID 447)
EMISSION UNIT(S): 38-B-1, 38-B-2
POLLUTANT MONITORED: PSA Gas Flow Rate

DATE/TIME	TOTAL DURATION (HRS)	CAUSE/CORRECTIVE ACTION
a) Monitor malfunction		
Total	<u>0.00</u>	
b) Non-monitor malfunction		
Total	<u>0.00</u>	
c) QA calibration		
Total	<u>0.00</u>	
d) Other known causes		
Total	<u>0.00</u>	
e) Unknown causes		
Total	<u>0.00</u>	

MINNESOTA POLLUTION CONTROL AGENCY

AQD FILE #: #0203 (AI ID 447)

EXCESS EMISSION AND CEM REPORTING FORM

POLLUTANT (circle one): SO₂ NO_x CO CO₂ O₂ TRS H₂S HCL Opacity
 Other: TOC

REPORTING QUARTER: First, 2019

MONITOR

MODEL: Polytron IR Ex HC

MFR: Drager, Inc.

FACILITY:

St. Paul Park Refining Co. LLC

EMISSION LIMIT AND AVERAGE TIME:

10 mg TOC/liter of gasoline loaded (6 hour avg)

0.74% - CEM limit established by stack test

as surrogate for 10 mg/L

EMISSION SUBJECT ITEM: EQUI0000000028

EMISSION BASIS:

40 CFR 63.422(b) NESHAP Subpart CC

EMISSION UNIT(S): Light oil loadrack

Vapor Recovery Unit

ASSOCIATED ITEMS: TREA18, TREA25, EQUI168, STRU31, STRU016

TOTAL OPERATING HOURS

OF EMISSION UNIT: 2126

A. EMISSION DATA SUMMARY

1 DURATION OF EXCESS EMISSIONS (HRS)	
a) Startup/Shutdown	<u>0.00</u>
b) Control equipment	<u>0.00</u>
c) Process problems	<u>0.00</u>
d) Other known causes	<u>0.00</u>
e) Unknown causes	<u>0.00</u>
f) Soot blowing	<u>0.00</u>
g) Fuel problems	<u>0.00</u>
2 TOTAL DURATION (HRS)	<u>0.00</u>
3 PERCENT OF TOTAL EXCESS EMISSIONS	<u>0.00%</u>

B. CEM PERFORMANCE SUMMARY

1 DURATION OF CEM DOWNTIME DURING SOURCE OPERATION (HRS)	
a) Monitor malfunction	<u>0.00</u>
b) Non-monitor malfunction	<u>0.00</u>
c) QA calibration	<u>0.00</u>
d) Other known causes	<u>9.00</u>
e) Unknown causes	<u>0.00</u>
2 TOTAL DURATION (HRS)	<u>9.00</u>
3 PERCENT OF TOTAL CEM DOWNTIME	<u>0.42%</u>

FOR OPACITY, RECORD ALL TIMES IN MINUTES. FOR GASES, RECORD ALL TIMES IN HOURS.

% Total Excess Emissions = Total Duration of Excess Emissions / (Total Operating Time - CEM Downtime)

% Total CEM Downtime = CEM Downtime / Total Operating Time

NOTES:

If no exceedances: I certify that the required analyses were made, that I am familiar with the results, and that to the best of my knowledge there were no exceedances during the reporting period. I certify that I am familiar with the information in this report and that to the best of my knowledge the information is valid.

SUBMITTED BY: See certification page at front of report

DATE: _____

CONTINUOUS EMISSION MONITOR EXCESS EMISSION REPORT

REPORTING QUARTER: First, 2019 AOD FILE #: #0203 (AI ID 447)
 EMISSION UNIT(S): Light oil loadrack VRU
 POLLUTANT MONITORED: TOC

DATE/TIME	TOTAL DURATION (HRS)	MAX. CONCENTRATION	CAUSE/CORRECTIVE ACTION
a) Startup/Shutdown			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
b) Control equipment			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
c) Process problems			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
d) Other known causes			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
e) Unknown causes			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
f) Soot blowing			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
g) Fuel problems			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		

CONTINUOUS EMISSION MONITOR DOWNTIME REPORT

REPORTING QUARTER: First, 2019 AQD FILE #: #0203 (AI ID 447)

EMISSION UNIT(S): Light oil loadrack VRU

POLLUTANT MONITORED: TOC

DATE/TIME	TOTAL	CAUSE/CORRECTIVE ACTION
a) Monitor malfunction		
Total	<u>0.00</u>	
b) Non-monitor malfunction		
Total	<u>0.00</u>	
c) QA calibration		
Total	<u>0.00</u>	
d) Other known causes		
2/24/2019 6:00		
2/24/2019 13:00	7.00	Span gas regulator broken; replace empty bottle with new valve
3/7/2019 14:00		
3/7/2019 16:00	<u>2.00</u>	Replaced diaphragm and checked for plugging
	9.00	
e) Unknown causes		
Total	<u>0.00</u>	

MINNESOTA POLLUTION CONTROL AGENCY

AQD FILE #: #0203 (AI ID 447)

EXCESS EMISSION AND CEM REPORTING FORM

POLLUTANT (circle one): SO₂ NO_x CO CO₂ O₂ TRS H₂S HCL Opacity
 Other: Temperature

REPORTING QUARTER: First, 2019 MONITOR MODEL: Thermocouple

FACILITY: St. Paul Park Refining Co. LLC MFR: NA

EMISSION SUBJECT ITEM: COM0000000028 EMISSION LIMIT AND AVERAGE TIME: > 215°F - 3 hour rolling average
 Unit Startup - 8/6/08

EMISSION UNIT(S): Light oil loadrack EMISSION BASIS: Title V Permit
 Permanent Vapor Combustor Unit (PVCU)

ASSOCIATED ITEMS: TREA26, EQUI28, EQUI41, STRU32

TOTAL OPERATING HOURS
 OF EMISSION UNIT: 34

A. EMISSION DATA SUMMARY		B. CEM PERFORMANCE SUMMARY	
1 DURATION OF EXCESS EMISSIONS (HRS)		1 DURATION OF CEM DOWNTIME DURING SOURCE OPERATION (HRS)	
a) Startup/Shutdown	0.00	a) Monitor malfunction	0.00
b) Control equipment	0.00	b) Non-monitor malfunction	0.00
c) Process problems	0.00	c) QA calibration	0.00
d) Other known causes	0.00	d) Other known causes	0.00
e) Unknown causes	0.00	e) Unknown causes	0.00
f) Soot blowing	0.00		
g) Fuel problems	0.00		
2 TOTAL DURATION (HRS)	0.00	2 TOTAL DURATION (HRS)	0.00
3 PERCENT OF TOTAL EXCESS EMISSIONS	0.00%	3 PERCENT OF TOTAL CEM DOWNTIME	0.00%

FOR OPACITY, RECORD ALL TIMES IN MINUTES. FOR GASES, RECORD ALL TIMES IN HOURS.

% Total Excess Emissions = $\frac{\text{Total Duration of Excess Emissions}}{\text{Total Operating Time} - \text{CEM Downtime}}$
 % Total CEM Downtime = $\frac{\text{CEM Downtime}}{\text{Total Operating Time}}$

NOTES: _____

If no exceedances: I certify that the required analyses were made, that I am familiar with the results, and that to the best of my knowledge there were no exceedances during the reporting period. I certify that I am familiar with the information in this report and that to the best of my knowledge the information is valid.

SUBMITTED BY: See certification page at front of report DATE: _____

CONTINUOUS EMISSION MONITOR EXCESS EMISSION REPORT

REPORTING QUARTER: First, 2019 AQD FILE #: #0203 (AI ID 447)

EMISSION UNIT(S): Light oil loadrack Process Vapor Burner (F

POLLUTANT MONITORED: Temperature

DATE/TIME	TOTAL DURATION (HRS)	MIN. TEMPERATURE	CAUSE/CORRECTIVE ACTION
a) Startup/Shutdown			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
b) Control equipment			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
c) Process problems			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
d) Other known causes			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
e) Unknown causes			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
f) Soot blowing			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
g) Fuel problems			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		

CONTINUOUS EMISSION MONITOR DOWNTIME REPORT

REPORTING QUARTER: First, 2019 AQD FILE #: #0203 (AI ID 447)
EMISSION UNIT(S): Light oil loadrack - PVB
POLLUTANT MONITORED: Temperature

DATE/TIME	TOTAL DURATION (HRS)	CAUSE/CORRECTIVE ACTION
a) Monitor malfunction		
Total	<u>0.00</u>	
b) Non-monitor malfunction		
Total	<u>0.00</u>	
c) QA calibration		
Total	<u>0.00</u>	
d) Other known causes		
Total	<u>0.00</u>	
e) Unknown causes		
Total	<u>0.00</u>	

EXCESS EMISSION AND CEM REPORTING FORM

POLLUTANT (circle one): SO₂ NO_x CO CO₂ O₂ TRS H₂S HCL Opacity OtherOther: This report addresses Flare SARA reportable emissions, pilot monitoring, pilot flame outages, and SO₂ monitoring.REPORTING QUARTER: First, 2019

MONITOR

MODEL SOLA II Dual Range

FACILITY:

MFR: Thermo ScientificSt. Paul Park Refining Co. LLC

EMISSION LIMIT AND AVERAGE TIME:

EMISSION SUBJECT ITEM: TREA13

EMISSION UNIT(S):

EMISSION BASIS:

TREA13 Refinery flare stack40 CFR 63 NESHAP Subpart CC, Subpart JaASSOCIATED ITEMS: FUGI73TOTAL OPERATING HOURS
OF EMISSION UNIT:2160

A. EMISSION DATA SUMMARY			B. CEM PERFORMANCE SUMMARY (Scanner)		C. CEM PERFORMANCE SUMMARY (SO ₂)		D. CEM PERFORMANCE SUMMARY (Pilots)	
1 DURATION OF SARA REPORTABLE EMISSIONS (HRS)			1 DURATION OF CEM DOWNTIME DURING SOURCE OPERATION (HRS)		1 DURATION OF CEM DOWNTIME DURING SOURCE OPERATION (HRS)		DURATION OF PILOT DOWNTIME DURING SOURCE OPERATION (HRS)	
	SO ₂	NO _x	a) Monitor malfunction	0.00	a) Monitor malfunction	0.00	a) Pilot malfunction	0.00
a) Startup/Shutdown	0.00	0.00	b) Non-monitor malfunction	0.00	b) Non-monitor malfunction	0.00	b) Other known causes	0.00
b) Control equipment	0.00	0.00	c) QA calibration	0.00	c) QA calibration	1.00	c) Unknown causes	0.00
c) Process problems	23.00	0.00	d) Other known causes	0.00	d) Other known causes	29.00		
d) Other known causes	0.00	0.00	e) Unknown causes	0.00	e) Unknown causes	0.00	TOTAL DURATION (HRS)	0.00
e) Unknown causes	0.00	0.00					PERCENT OF TOTAL PILOT DOWNTIME	0.00%
f) Soot blowing	0.00	0.00	2 TOTAL DURATION (HRS)	0.00	2 TOTAL DURATION (HRS)	30.00		
g) Fuel problems	0.00	0.00	3 PERCENT OF TOTAL CEM DOWNTIME	0.00%	3 PERCENT OF TOTAL CEM DOWNTIME	1.39%		
2 TOTAL DURATION (HRS)	23.00	0.00						
3 PERCENT OF TOTAL EXCESS EMISSIONS	1.06%	0.00%						

FOR OPACITY, RECORD ALL TIMES IN MINUTES. FOR GASES, RECORD ALL TIMES IN HOURS.

% Total Excess Emissions = Total Duration of SARA Reportable Emissions / (Total Operating Time - CEM Downtime)

% Total CEM Downtime = CEM Downtime / Total Operating Time

NOTES:

If no exceedances: I certify that the required analyses were made, that I am familiar with the results, and that to the best of my knowledge there were no exceedances during the reporting period. I certify that I am familiar with the information in this report and that to the best of my knowledge the information is valid.

SUBMITTED BY: See certification page at front of report

DATE:

SARA Reportable Emissions Report - SO2 (i.e., > 500 lbs)

REPORTING QUARTER: First, 2019

AQD FILE #: #0203 (AI ID 447)

EMISSION UNIT(S): TREA13 Refinery flare stack

POLLUTANT MONITORED: SO2

DATE/TIME	TOTAL DURATION (HRS)	APPROX. SO2 EMITTED (LBS)	CAUSE/CORRECTIVE ACTION
a) Startup/Shutdown			
1/1/2019			
4/1/2019			
Total	0.00		
b) Control equipment			
1/1/2019			
4/1/2019			
Total	0.00		
c) Process problems			
2/3/2019 0800			
2/4/2019 0600	23.00	820.2	Please see Incident B in the summary.
Total	23.00		
d) Other known causes			
1/1/2019			
4/1/2019			
Total	0.00		
e) Unknown causes			
1/1/2019			
4/1/2019			
Total	0.00		
f) Soot blowing			
1/1/2019			
4/1/2019			
Total	0.00		
g) Fuel problems			
1/1/2019			
4/1/2019			
Total	0.00		

SARA Reportable Emissions Report - NO2 (i.e., > 1000 lbs)

REPORTING QUARTER: First, 2019

AQD FILE #: #0203 (A1 ID 447)

EMISSION UNIT(S): TREA13 Refinery flare stack

POLLUTANT MONITORED: NA (NOx is calculated)

DATE/TIME	TOTAL DURATION (HRS)	APPROX. NO2 EMITTED (LBS)	CAUSE/CORRECTIVE ACTION
a) Startup/Shutdown			
1/1/2019			
4/1/2019			
Total	0.00		
b) Control equipment			
1/1/2019			
4/1/2019			
Total	0.00		
c) Process problems			
1/1/2019			
4/1/2019			
Total	0.00		
d) Other known causes			
1/1/2019			
4/1/2019			
Total	0.00		
e) Unknown causes			
1/1/2019			
4/1/2019			
Total	0.00		
f) Soot blowing			
1/1/2019			
4/1/2019			
Total	0.00		
g) Fuel problems			
1/1/2019			
4/1/2019			
Total	0.00		

CONTINUOUS EMISSION MONITOR DOWNTIME REPORT

REPORTING QUARTER: First, 2019

AQD FILE #: #0203 (AI ID 447)

EMISSION UNIT(S): TREA13 Refinery flare stack

POLLUTANT MONITORED: SO2

DATE/TIME	TOTAL DURATION (HRS)	CAUSE/CORRECTIVE ACTION
c) QA calibration		
3/19/2019 8:00		
3/19/2019 9:00	1.00	
Total	1.00	
d) Other known causes		
1/2/2019 8:00		
1/2/2019 10:00	2.00	flush out sample and return lines
1/10/2019 9:00		
1/10/2019 11:00	2.00	work on sampling conditioning system
1/10/2019 14:00		
1/10/2019 18:00	4.00	flush sample & sample return lines
1/15/2019 10:00		
1/15/2019 11:00	1.00	tube cleaned/flushed
1/27/2019 9:00		
1/27/2019 11:00	2.00	tube cleaned/flushed
1/29/2019 7:00		
1/29/2019 8:00	1.00	replaced sample filter, cleaned tubing
1/31/2019 10:00		
1/31/2019 11:00	1.00	PM to replace rotor
2/4/2019 13:00		
2/4/2019 14:00	1.00	cleaned sample tube
2/8/2019 4:00		
2/8/2019 9:00	5.00	cleaned sample tube
2/12/2019 13:00		
2/12/2019 14:00	1.00	cleaned sample tube
2/17/2019 13:00		
2/17/2019 17:00	4.00	filter, tubing, valve replaced
3/14/2019 10:00		
3/14/2019 12:00	2.00	Preventative maintenance
3/16/2019 8:00		
3/16/2019 9:00	1.00	Cleaned sample bundle
3/21/2019 7:00		
3/21/2019 8:00	1.00	Sample line cleaned
3/28/2019 13:00		
3/28/2019 14:00	1.00	Sample line cleaned
Total	29.00	
e) Unknown causes		
Total	0.00	

FLARE SCANNER DOWNTIME REPORT

REPORTING QUARTER: First, 2019

AGD FILE #: #0203 (AT ID 447)

EMISSION UNIT(S): TREA13 Refinery flare stack

POLLUTANT MONITORED: Flame Presence (Non-Pollutant)

DATE/TIME	TOTAL DURATION (HRS)	CAUSE/CORRECTIVE ACTION
a) Monitor malfunction		
Total	<u>0.00</u>	
b) Non-monitor malfunction		
Total	<u>0.00</u>	
c) QA calibration		
Total	<u>0.00</u>	
d) Other known causes		
Total	<u>0.00</u>	
e) Unknown causes		
Total	<u>0.00</u>	

FLARE PILOT DOWNTIME REPORT

REPORTING QUARTER: First, 2019

AQD FILE #: #0203 (AI ID 447)

EMISSION UNIT(S): TREA0000000013

POLLUTANT MONITORED: Flame Presence (Non-Pollutant)

DATE/TIME	TOTAL DURATION (HRS)	CAUSE/CORRECTIVE ACTION
a) Pilot malfunction		
1/1/2019		
4/1/2019		
Total	0.00	
b) Other known causes		
1/1/2019		
4/1/2019		
Total	0.00	
c) Unknown causes		
1/1/2019		
4/1/2019		
Total	0.00	

AQD FILE #: #0203 (AI ID 447)

POLLUTANT (circle one): SO₂ NO_x CO CO₂ O₂ TRS H₂S HCL Opacity
Other: Temp

MONITOR
MODEL: 002A GC

MFR: ABB

EMISSION LIMIT AND AVERAGE TIME:

150 ppm H2S -	365 day rolling average
> 1400 DEGF -	3 hour rolling average

EMISSION UNIT(S): W.W.T.P. Thermal Oxidizer
(SBC Vent Gas / TO Temperature)

EMISSION BASIS:
40 CFR 52.21
 MN Rule 7007.0800, Subp. 2

TOTAL OPERATING HOURS
OF EMISSION UNIT: 1721

A. EMISSION DATA SUMMARY			B. CEM PERFORMANCE SUMMARY		
1 DURATION OF EXCESS EMISSIONS (HRS)			1 DURATION OF CEM DOWNTIME DURING SOURCE OPERATION (HRS)		
	H2S	Temperature		H2S	Temperature
a) Startup/Shutdown	0.00	0.00	a) Monitor malfunction	0.00	0.00
b) Control equipment	0.00	0.00	b) Non-monitor malfunction	0.00	0.00
c) Process problems	0.00	0.00	c) QA calibration	0.00	0.00
d) Other known causes	0.00	0.00	d) Other known causes	6.00	0.00
e) Unknown causes	0.00	0.00	e) Unknown causes	0.00	0.00
f) Soot blowing	0.00	0.00			
g) Fuel problems	0.00	0.00			
2 TOTAL DURATION (HRS)	0.00	0.00	2 TOTAL DURATION (HRS)	6.00	0.00
3 PERCENT OF TOTAL EXCESS EMISSIONS	0.00%	0.00%	3 PERCENT OF TOTAL CEM DOWNTIME	0.35%	0.00%
FOR OPACITY, RECORD ALL TIMES IN MINUTES. FOR GASES, RECORD ALL TIMES IN HOURS.					

% Total Excess Emissions =	Total Duration of Excess Emissions / (Total Operating Time - CEM Downtime)
% Total CEM Downtime =	CEM Downtime / Total Operating Time

NOTES: SPPRC's SBC's were converted to an activated sludge aerator system in June 2014.
SBC's are no longer in-use.

If no exceedances: I certify that the required analyses were made, that I am familiar with the results, and that to the best of my knowledge there were no exceedances during the reporting period. I certify that I am familiar with the information in this

SUBMITTED BY: See certification page at front of report DATE: _____

CONTINUOUS EMISSION MONITOR EXCESS EMISSION REPORT

REPORTING QUARTER: First, 2019 AQD FILE #: #0203 (AI ID 447)

EMISSION UNIT(S): W.W.T.P. Thermal Oxidizer

POLLUTANT MONITORED: H2S

DATE/TIME	TOTAL DURATION (HRS)	MAX. CONC. (150 ppm, 365 day average)	CAUSE/CORRECTIVE ACTION
a) Startup/Shutdown			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
b) Control equipment			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
c) Process problems			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
d) Other known causes			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
e) Unknown causes			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
f) Soot blowing			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
g) Fuel problems			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		

CONTINUOUS EMISSION MONITOR EXCESS EMISSION REPORT

REPORTING QUARTER: First, 2019

AQD FILE #: #0203 (AI ID 447)

EMISSION UNIT(S): W.W.T.P. Thermal Oxidizer

POLLUTANT MONITORED: Temperature

DATE/TIME	TOTAL DURATION (HRS)	MIN. TEMP. (°F, 3-hr average)	CAUSE/CORRECTIVE ACTION
a) Startup/Shutdown			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
b) Control equipment			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
c) Process problems			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
d) Other known causes			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
e) Unknown causes			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
f) Soot blowing			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
g) Fuel problems			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		

CONTINUOUS EMISSION MONITOR DOWNTIME REPORT

REPORTING QUARTER: First, 2019 AQD FILE #: #0203 (AI ID 447)

EMISSION UNIT(S): W.W.T.P. Thermal Oxidizer

POLLUTANT MONITORED: H2S

DATE/TIME	TOTAL DURATION (HRS)	CAUSE/CORRECTIVE ACTION
a) Monitor malfunction		
Total	<u>0.00</u>	
b) Non-monitor malfunction		
Total	<u>0.00</u>	
c) QA calibration		
Total	<u>0.00</u>	
d) Other known causes		
1/2/2019 11:00		
1/2/2019 12:00	1.00	Preventative maintenance
3/7/2019 14:00		
3/7/2019 15:00	1.00	Loss of signal due to controls work
3/22/2019 16:00		
3/22/2019 20:00	4.00	Communications error
Total	<u>6.00</u>	
e) Unknown causes		
Total	<u>0.00</u>	

CONTINUOUS EMISSION MONITOR DOWNTIME REPORT

REPORTING QUARTER: First, 2019

AQD FILE #: #0203 (AI ID 447)

EMISSION UNIT(S): W.W.T.P. Thermal Oxidizer

POLLUTANT MONITORED: Temperature

DATE/TIME	TOTAL	CAUSE/CORRECTIVE ACTION
a) Monitor malfunction		
Total	<u>0.00</u>	
b) Non-monitor malfunction		
Total	<u>0.00</u>	
c) QA calibration		
Total	<u>0.00</u>	
d) Other known causes		
Total	<u>0.00</u>	
e) Unknown causes		
Total	<u>0.00</u>	

MINNESOTA POLLUTION CONTROL AGENCY

AQD FILE # #0203 (AI ID 447)

EXCESS EMISSION AND CEM REPORTING FORM

POLLUTANT (circle one): SO₂ NO_x CO CO₂ O₂ TRS H₂S HCL Opacity
 Other: Temp

REPORTING QUARTER: First, 2019 MONITOR MODEL: Thermocouple

FACILITY: St. Paul Park Refining Co. LLC MFR: _____

EMISSION SUBJECT ITEM: COMG13 EMISSION LIMIT AND AVERAGE TIME: > 1400 DEGF - 3 hour rolling average

EMISSION UNIT(S): W.W.T.P. Thermal Oxidizer
 (N₂ Vent Gas / TO Temperature) EMISSION BASIS: 40 CFR 61.349(a)(2)
 TREAS, EQUI209, STRU22, SV065 MN Rule 7011.9930, Sub.E

TOTAL OPERATING HOURS OF EMISSION UNIT: 1721

A. EMISSION DATA SUMMARY		B. CEM PERFORMANCE SUMMARY	
1 DURATION OF EXCESS EMISSIONS (HRS)		1 DURATION OF CEM DOWNTIME DURING SOURCE OPERATION (HRS)	
	Temperature		Temperature
a) Startup/Shutdown	<u>0.00</u>	a) Monitor malfunction	<u>0.00</u>
b) Control equipment	<u>0.00</u>	b) Non-monitor malfunction	<u>0.00</u>
c) Process problems	<u>0.00</u>	c) QA calibration	<u>0.00</u>
d) Other known causes	<u>0.00</u>	d) Other known causes	<u>0.00</u>
e) Unknown causes	<u>0.00</u>	e) Unknown causes	<u>0.00</u>
f) Soot blowing	<u>0.00</u>		
g) Fuel problems	<u>0.00</u>		
2 TOTAL DURATION (HRS)	<u>0.00</u>	2 TOTAL DURATION (HRS)	<u>0.00</u>
3 PERCENT OF TOTAL EXCESS EMISSIONS	<u>0.00%</u>	3 PERCENT OF TOTAL CEM DOWNTIME	<u>0.00%</u>

FOR OPACITY, RECORD ALL TIMES IN MINUTES. FOR GASES, RECORD ALL TIMES IN HOURS.

% Total Excess Emissions = Total Duration of Excess Emissions / (Total Operating Time - CEM Downtime)
 % Total CEM Downtime = CEM Downtime / Total Operating Time

NOTES: _____

If no exceedances: I certify that the required analyses were made, that I am familiar with the results, and that to the best of my knowledge there were no exceedances during the reporting period. I certify that I am familiar with the information in this

SUBMITTED BY: See certification page at front of report DATE: _____

CONTINUOUS EMISSION MONITOR EXCESS EMISSION REPORT

REPORTING QUARTER: First, 2019

AQD FILE #: #0203 (AI ID 447)

EMISSION UNIT(S): W.W.T.P. Thermal Oxidizer

POLLUTANT MONITORED: Temperature

DATE/TIME	TOTAL DURATION (HRS)	MIN. TEMP. (°F, 3-hr average)	CAUSE/CORRECTIVE ACTION
a) Startup/Shutdown			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
b) Control equipment			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
c) Process problems			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
d) Other known causes			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
e) Unknown causes			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
f) Soot blowing			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
g) Fuel problems			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		

**CONTINUOUS EMISSION MONITOR
DOWNTIME REPORT**

REPORTING QUARTER: First, 2019

EMISSION UNIT(S): W.W.T.P. Thermal Oxidizer

POLLUTANT MONITORED: Temperature

AQD FILE # #0203 (AI ID 447)

DATE/TIME	TOTAL DURATION (HRS)	CAUSE/CORRECTIVE ACTION
a) Monitor malfunction		
Total	<u>0.00</u>	
b) Non-monitor malfunction		
Total	<u>0.00</u>	
c) QA calibration		
Total	<u>0.00</u>	
d) Other known causes		
Total	<u>0.00</u>	
e) Unknown causes		
Total	<u>0.00</u>	

MINNESOTA POLLUTION CONTROL AGENCY

AQD FILE # 00203 (AI ID 447)

EXCESS EMISSION AND CEM REPORTING FORM

POLLUTANT (circle one): SO2 NOx CO CO2 O2 TRS H2S HCL Opacity
Other: SO2 also a surrogate for MACT Subpart UUU HAP Emissions

REPORTING QUARTER: First, 2019

MONITOR

MODEL: Advance Optima, Limas 11, NDUV

FACILITY:

St. Paul Park Refining Co. LLC

MFR:

ABB

EMISSION SUBJECT ITEM: EQUI33

EMISSION LIMIT AND AVERAGE TIME:

250 ppmvd, O2 free - 12 hour rolling average

EMISSION UNIT(S):

#3 SRU/SCOT unit
Unit Startup - 11/16/2004, CEM Startup 11/16/04

EMISSION BASIS:

40 CFR 60 NSPS Subpart J
40 CFR 63.1568 Table 29, Opt 1a MACT Subpart UUU

ASSOCIATED ITEMS: TREA4, COMG7, EQUI163, EQUI296, EQUI210, EQUI211, STRU6

PROCESS UNIT DESCRIPTION: EU0083 is a 4-Stage Claus Sulfur Recovery Unit with a tail Gas Treating Unit.
The train includes the SRU incinerator. The sulfur unit is designed to process 50 LTPD.

TOTAL OPERATING HOURS

OF EMISSION UNIT: 2160

A. EMISSION DATA SUMMARY	B. CEM PERFORMANCE SUMMARY	C. SRU BYPASS INFORMATION
1 DURATION OF EXCESS EMISSIONS (HRS)	1 DURATION OF CEM DOWNTIME DURING SOURCE OPERATION (HRS)	1 DURATION OF BYPASS
a) Startup/Shutdown <u>0.00</u>	a) Monitor malfunction <u>0.00</u>	a) Process Problems <u>0.00</u>
b) Control equipment <u>0.00</u>	b) Non-monitor malfunction <u>0.00</u>	b) Other known causes <u>0.00</u>
c) Process problems <u>0.00</u>	c) QA calibration <u>0.00</u>	c) Unknown causes <u>0.00</u>
d) Other known causes <u>0.00</u>	d) Other known causes <u>0.00</u>	2 TOTAL DURATION (HRS) <u>0.00</u>
e) Unknown causes <u>0.00</u>	e) Unknown causes <u>0.00</u>	3 PERCENT OF TOTAL OPERATION HOURS <u>0.00%</u>
f) Soot blowing <u>0.00</u>	2 TOTAL DURATION (HRS) <u>0.00</u>	
g) Fuel problems <u>0.00</u>	3 PERCENT OF TOTAL CEM DOWNTIME <u>0.00%</u>	
2 TOTAL DURATION (HRS) <u>0.00</u>		
3 PERCENT OF TOTAL EXCESS EMISSIONS <u>0.00%</u>		

FOR OPACITY, RECORD ALL TIMES IN MINUTES. FOR GASES, RECORD ALL TIMES IN HOURS.

% Total Excess Emissions = $\frac{\text{Total Duration of Excess Emissions}}{\text{Total Operating Time} - \text{CEM Downtime}}$

% Total CEM Downtime = $\frac{\text{CEM Downtime}}{\text{Total Operating Time}}$

NOTES: Actual monitored values are noted in this section.

During excess emission events, a value equal to 1.5 times the high calibration gas concentration is used to replace any analyzer readings over that value since measured data points are not verifiable or accurate when at least 50% greater than the high calibration gas concentration.

If no exceedances: I certify that the required analyses were made, that I am familiar with the results, and that to the best of my knowledge there were no exceedances during the reporting period. I certify that I am familiar with the information in this report and that to the best of my knowledge the information is valid.

SUBMITTED BY: See certification page at front of report

DATE: _____

CONTINUOUS EMISSION MONITOR EXCESS EMISSION REPORT

REPORTING QUARTER: First, 2019 AQD FILE #: #0203 (AI ID 447)

EMISSION UNIT(S): #3 SRU/SCOT unit

POLLUTANT MONITORED: SO2 (ppm)

DATE/TIME	TOTAL DURATION (HRS)	MAX. CONC. (ppm, 12-hr average)		CAUSE/CORRECTIVE ACTION
		Actual	Recalc	
a) Startup/Shutdown				
1/1/2019				
4/1/2019				No excess emissions.
Total	0.00			
b) Control equipment				
1/1/2019				
4/1/2019				No excess emissions.
Total	0.00			
c) Process problems				
1/1/2019				
4/1/2019				No excess emissions.
Total	0.00			
d) Other known causes				
1/1/2019				
4/1/2019				No excess emissions.
Total	0.00			
e) Unknown causes				
1/1/2019				
4/1/2019				No excess emissions.
Total	0.00			
f) Soot blowing				
1/1/2019				
4/1/2019				No excess emissions.
Total	0.00			
g) Fuel problems				
1/1/2019				
4/1/2019				No excess emissions.
Total	0.00			

**CONTINUOUS EMISSION MONITOR
DOWNTIME REPORT**

REPORTING QUARTER: First, 2019 AQD FILE #: #0203 (AI ID 447)
 EMISSION UNIT(S): #3 SRU/SCOT unit
 POLLUTANT MONITORED: SO2

DATE/TIME	TOTAL DURATION (HRS)	CAUSE/CORRECTIVE ACTION
a) Monitor malfunction		
Total	<u>0.00</u>	
b) Non-monitor malfunction		
Total	<u>0.00</u>	
c) QA calibration		
Total	<u>0.00</u>	
d) Other known causes		
Total	<u>0.00</u>	
e) Unknown causes		
Total	<u>0.00</u>	

CONTINUOUS EMISSION MONITOR
SRU Bypass Information

REPORTING QUARTER: First, 2019 AQD FILE #: #0203 (AI ID 447)

EMISSION UNIT(S): #3 SRU/SCOT unit

POLLUTANT MONITORED: Bypass (Acid gas)

	DATE/TIME	TOTAL DURATION (HRS)	CAUSE/CORRECTIVE ACTION
a) Process problems			
	1/1/2019		
	4/1/2019		No bypasses that resulted in excess emissions.
Total		0.00	
b) Other known causes			
	1/1/2019		
	4/1/2019		No bypasses that resulted in excess emissions.
Total		0.00	
b) Unknown causes			
	1/1/2019		
	4/1/2019		No bypasses that resulted in excess emissions.
Total		0.00	

MINNESOTA POLLUTION CONTROL AGENCY

AQD FILE #: #0203 (AI ID 447)

EXCESS EMISSION AND CEM REPORTING FORM

POLLUTANT (circle one): SO2 NOx CO CO2 O2 TRS H2S HCL Opacity
Other: _____

REPORTING QUARTER: First, 2019

MONITOR

MODEL: Advance Optima, Limas 11, NDUV

FACILITY:

St. Paul Park Refining Co. LLC

MFR: ABB

EMISSION LIMIT AND AVERAGE TIME:

45.0 lb SO2/hr - 1 hour average

15.0 lb SO2/hr - 3 hour rolling average

EMISSION SUBJECT ITEM: EQUI33

EMISSION UNIT(S): #3 SRU/SCOT unit

Unit Startup - 11/16/2004

EMISSION BASIS: MN Rule 7009.0020 - AAQS/SIP

ASSOCIATED ITEMS: TREA4, COMG7, EQUI163, EQUI296, EQUI210, EQUI211, STRU6

TOTAL OPERATING HOURS

OF EMISSION UNIT: 2160

A. EMISSION DATA SUMMARY			B. CEM PERFORMANCE SUMMARY	
	1 hr	3-hr		
1 DURATION OF EXCESS EMISSIONS (HRS)			1 DURATION OF CEM DOWNTIME DURING SOURCE OPERATION (HRS)	
a) Startup/Shutdown	0.00	0.00	a) Monitor malfunction	0.00
b) Control equipment	0.00	0.00	b) Non-monitor malfunction	0.00
c) Process problems	0.00	0.00	c) QA calibration	0.00
d) Other known causes	0.00	0.00	d) Other known causes	0.00
e) Unknown causes	0.00	0.00	e) Unknown causes	0.00
f) Soot blowing	0.00	0.00		
g) Fuel problems	0.00	0.00		
2 TOTAL DURATION (HRS)	0.00	0.00	2 TOTAL DURATION (HRS)	0.00
3 PERCENT OF TOTAL EXCESS EMISSIONS	0.00%	0.00%	3 PERCENT OF TOTAL CEM DOWNTIME	0.00%

FOR OPACITY, RECORD ALL TIMES IN MINUTES. FOR GASES, RECORD ALL TIMES IN HOURS.

% Total Excess Emissions = Total Duration of Excess Emissions / (Total Operating Time - CEM Downtime)

% Total CEM Downtime = CEM Downtime / Total Operating Time

NOTE:

#3 SRU/SCOT 1b SO2/hr CEM downtime is the same as reported for #3 SRU/SCOT SO2 ppm.

If no exceedances: I certify that the required analyses were made, that I am familiar with the results, and that to the best of my knowledge there were no exceedances during the reporting period. I certify that I am familiar with the information in this report and that to the best of my knowledge the information is valid.

SUBMITTED BY: See certification page at front of report

DATE: _____

CONTINUOUS EMISSION MONITOR EXCESS EMISSION REPORT

REPORTING QUARTER: First, 2019 AQR FILE #: #0203 (AI ID 447)
 EMISSION UNIT(S): #3 SRU/SCOT unit
 POLLUTANT MONITORED: SO2 (lbs/hr) - 45 lb/hr, 1-hr average

DATE/TIME	TOTAL DURATION (HRS)	MAX. CONCEN. (lbs/hr, 1-hr average)	CAUSE/CORRECTIVE ACTION
a) Startup/Shutdown			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
b) Control equipment			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
c) Process problems			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
d) Other known causes			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
e) Unknown causes			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
f) Soot blowing			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
g) Fuel problems			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		

CONTINUOUS EMISSION MONITOR EXCESS EMISSION REPORT

REPORTING QUARTER: First, 2019 AQR FILE # #0203 (AI ID 447)
 EMISSION UNIT(S): #3 SRU/SCOT unit
 POLLUTANT MONITORED: SO2 (lbs/hr) - 15 lb/hr, 3-hr average

DATE/TIME	TOTAL DURATION (HRS)	MAX. CONCEN. (lbs/hr, 3-hr average)	CAUSE/CORRECTIVE ACTION
a) Startup/Shutdown			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
b) Control equipment			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
c) Process problems			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
d) Other known causes			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
e) Unknown causes			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
f) Soot blowing			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
g) Fuel problems			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		

**CONTINUOUS EMISSION MONITOR
DOWNTIME REPORT**

REPORTING QUARTER: First, 2019 AQR FILE #: #0203 (AI ID 447)

EMISSION UNIT(S): #3 SRU/SCOT unit

POLLUTANT MONITORED: SO2 (lbs/hr)

DATE/TIME	TOTAL DURATION (HRS)	CAUSE/CORRECTIVE ACTION
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NOTE:

SO2 lb/hr downtime same as reported for #3 SRU/SCOT SO2 ppm

a) Monitor malfunction

Total	<u>0.00</u>	See #3 SCOT ppm page for details
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b) Non-monitor malfunction

Total	<u>0.00</u>	See #3 SCOT ppm page for details
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c) QA calibration

Total	<u>0.00</u>	See #3 SCOT ppm page for details
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d) Other known causes

Total	<u>0.00</u>	See #3 SCOT ppm page for details
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e) Unknown causes

Total	<u>0.00</u>	See #3 SCOT ppm page for details
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MINNESOTA POLLUTION CONTROL AGENCY

AQD FILE #: #0203 (AI ID 447)

EXCESS EMISSION AND CEM REPORTING FORM

POLLUTANT (circle one): SO₂ NO_x CO CO₂ O₂ TRS H₂S HCL Opacity
 Other: Temperature

REPORTING QUARTER: First, 2019 MONITOR MODEL: NA

FACILITY: St. Paul Park Refining Co. LLC MFR: NA

EMISSION SUBJECT ITEM: EU 088 EMISSION LIMIT AND AVERAGE TIME: > 550 Deg F - 3 hour rolling average
 Unit Startup - 10/20/2008

EMISSION UNIT(S): NP VEPR Phase 1 EMISSION BASIS: Title V Permit
 MN R. 7007.0800

ASSOCIATED ITEMS: TREA10, TREA7, STRU25 TOTAL OPERATING HOURS OF EMISSION UNIT: 0

A. EMISSION DATA SUMMARY		B. CEM PERFORMANCE SUMMARY	
1 DURATION OF EXCESS EMISSIONS (HRS)		1 DURATION OF CEM DOWNTIME DURING SOURCE OPERATION (HRS)	
a) Startup/Shutdown	<u>0.00</u>	a) Monitor malfunction	<u>0.00</u>
b) Control equipment	<u>0.00</u>	b) Non-monitor malfunction	<u>0.00</u>
c) Process problems	<u>0.00</u>	c) QA calibration	<u>0.00</u>
d) Other known causes	<u>0.00</u>	d) Other known causes	<u>0.00</u>
e) Unknown causes	<u>0.00</u>	e) Unknown causes	<u>0.00</u>
f) Soot blowing	<u>0.00</u>		
g) Fuel problems	<u>0.00</u>		
2 TOTAL DURATION (HRS)	<u>0.00</u>	2 TOTAL DURATION (HRS)	<u>0.00</u>
3 PERCENT OF TOTAL EXCESS EMISSIONS	<u>0.00%</u>	3 PERCENT OF TOTAL CEM DOWNTIME	<u>0.00%</u>
FOR OPACITY, RECORD ALL TIMES IN MINUTES. FOR GASES, RECORD ALL TIMES IN HOURS.			

% Total Excess Emissions = $\frac{\text{Total Duration of Excess Emissions}}{\text{Total Operating Time} - \text{CEM Downtime}}$

% Total CEM Downtime = $\frac{\text{CEM Downtime}}{\text{Total Operating Time}}$

NOTES: _____

If no exceedances: I certify that the required analyses were made, that I am familiar with the results, and that to the best of my knowledge there were no exceedances during the reporting period. I certify that I am familiar with the information in this report and that to the best of my knowledge the information is valid.

SUBMITTED BY: See certification page at front of report DATE: _____

CONTINUOUS EMISSION MONITOR EXCESS EMISSION REPORT

REPORTING QUARTER: First, 2019 AQD FILE #: #0203 (AI ID 447)

EMISSION UNIT(S): NP VEPR Phase 1

POLLUTANT MONITORED: Temperature

DATE/TIME	TOTAL DURATION (HRS)	MIN. TEMP. (°F, 3-hr average)	CAUSE/CORRECTIVE ACTION
a) Startup/Shutdown			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
b) Control equipment			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
c) Process problems			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
d) Other known causes			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
e) Unknown causes			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
f) Soot blowing			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
g) Fuel problems			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		

CONTINUOUS EMISSION MONITOR DOWNTIME REPORT

REPORTING QUARTER: First, 2019

AQD FILE #: #0203 (AI ID 447)

EMISSION UNIT(S): NP VEPR Phase 1

POLLUTANT MONITORED: Temperature

DATE/TIME	TOTAL DURATION (HRS)	CAUSE/CORRECTIVE ACTION
a) Monitor malfunction		
Total	<u>0.00</u>	
b) Non-monitor malfunction		
Total	<u>0.00</u>	
c) QA calibration		
Total	<u>0.00</u>	
d) Other known causes		
Total	<u>0.00</u>	
e) Unknown causes		
Total	<u>0.00</u>	

MINNESOTA POLLUTION CONTROL AGENCY

AQD FILE #: #0203 (AI ID 447)

EXCESS EMISSION AND CEM REPORTING FORM

POLLUTANT (circle one): SO2 NOx CO CO2 O2 TRS H2S HCL Opacity
 Other: Temperature

REPORTING QUARTER: First, 2019 MONITOR MODEL: NA

FACILITY: St. Paul Park Refining Co. LLC MFR: NA

EMISSION SUBJECT ITEM: EU 089 EMISSION LIMIT AND AVERAGE TIME: > 550 Deg F - 3 hour rolling average

EMISSION UNIT(S): NP VEPR Phase 2 EMISSION BASIS: Title V Permit

ASSOCIATED ITEMS: TREA6, TREA8, STRU29 MN R. 7007.0800

TOTAL OPERATING HOURS OF EMISSION UNIT: 0

A. EMISSION DATA SUMMARY		B. CEM PERFORMANCE SUMMARY	
1 DURATION OF EXCESS EMISSIONS (HRS)		1 DURATION OF CEM DOWNTIME DURING SOURCE OPERATION (HRS)	
a) Startup/Shutdown	<u>0.00</u>	a) Monitor malfunction	<u>0.00</u>
b) Control equipment	<u>0.00</u>	b) Non-monitor malfunction	<u>0.00</u>
c) Process problems	<u>0.00</u>	c) QA calibration	<u>0.00</u>
d) Other known causes	<u>0.00</u>	d) Other known causes	<u>0.00</u>
e) Unknown causes	<u>0.00</u>	e) Unknown causes	<u>0.00</u>
f) Soot blowing	<u>0.00</u>		
g) Fuel problems	<u>0.00</u>		
2 TOTAL DURATION (HRS)	<u>0.00</u>	2 TOTAL DURATION (HRS)	<u>0.00</u>
3 PERCENT OF TOTAL EXCESS EMISSIONS	<u>0.00%</u>	3 PERCENT OF TOTAL CEM DOWNTIME	<u>0.00%</u>

FOR OPACITY, RECORD ALL TIMES IN MINUTES. FOR GASES, RECORD ALL TIMES IN HOURS.

% Total Excess Emissions = $\frac{\text{Total Duration of Excess Emissions}}{(\text{Total Operating Time} - \text{CEM Downtime})}$

% Total CEM Downtime = $\frac{\text{CEM Downtime}}{\text{Total Operating Time}}$

NOTES: _____

If no exceedances: I certify that the required analyses were made, that I am familiar with the results, and that to the best of my knowledge there were no exceedances during the reporting period. I certify that I am familiar with the information in this report and that to the best of my knowledge the information is valid.

SUBMITTED BY: See certification page at front of report DATE: _____

CONTINUOUS EMISSION MONITOR EXCESS EMISSION REPORT

REPORTING QUARTER: First, 2019 AQD FILE #: #0203 (AI ID 447)

EMISSION UNIT(S): NP VEPR Phase 2

POLLUTANT MONITORED: Temperature

DATE/TIME	TOTAL DURATION (HRS)	MIN. TEMP. (°F, 3-hr average)	CAUSE/CORRECTIVE ACTION
a) Startup/Shutdown			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
b) Control equipment			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
c) Process problems			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
d) Other known causes			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
e) Unknown causes			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
f) Soot blowing			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
g) Fuel problems			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		

CONTINUOUS EMISSION MONITOR DOWNTIME REPORT

REPORTING QUARTER: First, 2019

AQD FILE #: #0203 (AI ID 447)

EMISSION UNIT(S): NP VEPR Phase 2

POLLUTANT MONITORED: Temperature

DATE/TIME	TOTAL DURATION (HRS)	CAUSE/CORRECTIVE ACTION
a) Monitor malfunction		
Total	<u>0.00</u>	
b) Non-monitor malfunction		
Total	<u>0.00</u>	
c) QA calibration		
Total	<u>0.00</u>	
d) Other known causes		
Total	<u>0.00</u>	
e) Unknown causes		
Total	<u>0.00</u>	

MINNESOTA POLLUTION CONTROL AGENCY

AQD FILE #: #0203 (AI ID 447)

EXCESS EMISSION AND CEM REPORTING FORM

POLLUTANT (circle one): SO₂ **NO_x** CO CO₂ **O₂** TRS H₂S HCL Opacity

Other: _____

REPORTING QUARTER: First, 2019

MONITOR Syscon/Uras 26 - NO_x

MODEL: Magnos 206 - O₂

FACILITY: St. Paul Park Refining Co. LLC

MFR: ABB

EMISSION SUBJECT ITEM: EQUI42

EMISSION LIMIT AND AVERAGE TIME: 0.20 lb/mmbtu - 30 Day rolling average

EMISSION UNIT(S): Boiler 7
 Boiler 16-B-7

EMISSION BASIS: NSPS Db

ASSOCIATED ITEMS: COMG27 (Boilers 7&8), EQUI0212,
 EQUI214, STRU44

OPERATING HOURS OF EMISSION UNIT: 2160

A. EMISSION DATA SUMMARY		B. CEM Performance Summary	
DURATION OF EXCESS EMISSIONS (HRS)		1 DURATION OF CEM DOWNTIME DURING	
1	lb/mmbtu (30 Day)	SOURCE OPERATION (HRS)	Natural Gas
a) Startup/Shutdown	<u>0.00</u>	a) Monitor malfunction	<u>0.00</u>
b) Control equipment	<u>0.00</u>	b) Non-monitor malfunction	<u>0.00</u>
c) Process problems	<u>0.00</u>	c) QA calibration	<u>0.00</u>
d) Other known causes	<u>0.00</u>	d) Other known causes	<u>0.00</u>
e) Unknown causes	<u>0.00</u>	e) Unknown causes	<u>0.00</u>
f) Soot blowing	<u>0.00</u>		
g) Fuel problems	<u>0.00</u>		
2 TOTAL DURATION (HRS)	<u>0.00</u>	2 TOTAL DURATION (HRS)	<u>0.00</u>
3 PERCENT OF TOTAL		3 PERCENT OF TOTAL	
EXCESS EMISSIONS	<u>0.00%</u>	CEM DOWNTIME	<u>0.00%</u>

FOR OPACITY, RECORD ALL TIMES IN MINUTES. FOR GASES, RECORD ALL TIMES IN HOURS.

% Total Excess Emissions = Total Duration of Excess Emissions / (Total Operating Time - CEM Downtime)

% Total CEM Downtime = CEM Downtime / Total Operating Time

NOTES: _____

If no exceedances: I certify that the required analyses were made, that I am familiar with the results, and that to the best of my knowledge there were no exceedances during the reporting period. I certify that I am familiar with the information in this report and that to the best of my knowledge the information is valid.

SUBMITTED BY: See certification page at front of report DATE: _____

EXCESS EMISSION REPORT

REPORTING QUARTER: First, 2019 AQD FILE #: #0203 (AI ID 447)

EMISSION UNIT(S): Boiler 16-B-7

POLLUTANT MONITORED: NOx (lbs/mmbtu)

DATE/TIME	TOTAL DURATION (HRS)	MAX. CONCENTRATION	CAUSE/CORRECTIVE ACTION
a) Startup/Shutdown			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
b) Control equipment			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
c) Process problems			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
d) Other known causes			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
e) Unknown causes			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
f) Soot blowing			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
g) Fuel problems			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		

CONTINUOUS EMISSION MONITOR DOWNTIME REPORT

REPORTING QUARTER: First, 2019 AQD FILE #: #0203 (AI ID 447)

EMISSION UNIT(S): 16-B-7

POLLUTANT MONITORED: NOx

DATE/TIME	TOTAL DURATION (HRS)	CAUSE/CORRECTIVE ACTION
a) Monitor malfunction		
Total	<u>0.00</u>	
b) Non-monitor malfunction		
Total	<u>0.00</u>	
c) QA calibration		
Total	<u>0.00</u>	
d) Other known causes		
Total	<u>0.00</u>	
e) Unknown causes		
Total	<u>0.00</u>	

MINNESOTA POLLUTION CONTROL AGENCY

AQD FILE #: #0203 (AI ID 447)

EXCESS EMISSION AND CEM REPORTING FORM

POLLUTANT (circle one): SO₂ NO_x CO CO₂ O₂ TRS H₂S HCL Opacity

Other: FLOW

REPORTING QUARTER: First, 2019

MONITOR

MODEL: Fuel Gas Flow Rate/FG H₂S CEM

FACILITY:

St. Paul Park Refining Co. LLC

MFR: _____

EMISSION LIMIT AND AVERAGE TIME:

0.025 lb SO₂/mbtu - 3 hour rolling average

EMISSION SUBJECT ITEM: EQUI42

EMISSION UNIT(S): Boiler 7

Boiler 16-B-7

EMISSION BASIS: SIP for SO₂ NAAQS

ASSOCIATED ITEMS: COMG7, COMG27, EQUI163, STRU44

OPERATING HOURS OF EMISSION UNIT: 2160

A. EMISSION DATA SUMMARY		B. CEM Performance Summary	
DURATION OF EXCESS EMISSIONS (HRS)		1 DURATION OF CEM DOWNTIME DURING SOURCE OPERATION (HRS)	
1	lb/mbtu		Natural Gas
a) Startup/Shutdown	0.00	a) Monitor malfunction	0.00
b) Control equipment	0.00	b) Non-monitor malfunction	0.00
c) Process problems	0.00	c) QA calibration	0.00
d) Other known causes	0.00	d) Other known causes	0.00
e) Unknown causes	0.00	e) Unknown causes	0.00
f) Soot blowing	0.00		
g) Fuel problems	0.00		
2 TOTAL DURATION (HRS)	0.00	2 TOTAL DURATION (HRS)	0.00
3 PERCENT OF TOTAL EXCESS EMISSIONS	0.00%	3 PERCENT OF TOTAL CEM DOWNTIME	0.00%

FOR OPACITY, RECORD ALL TIMES IN MINUTES. FOR GASES, RECORD ALL TIMES IN HOURS.

% Total Excess Emissions = Total Duration of Excess Emissions / (Total Operating Time - CEM Downtime)

% Total CEM Downtime = CEM Downtime / Total Operating Time

NOTES:

If no exceedances: I certify that the required analyses were made, that I am familiar with the results, and that to the best of my knowledge there were no exceedances during the reporting period. I certify that I am familiar with the information in this report and that to the best of my knowledge the information is valid.

SUBMITTED BY: See certification page at front of report

DATE: _____

CONTINUOUS EMISSION MONITOR EXCESS EMISSION REPORT

REPORTING QUARTER: First, 2019 AQD FILE #: #0203 (AI ID 447)

EMISSION UNIT(S): Boiler 16-B-7

POLLUTANT MONITORED: SO2 lb/mmBtu

DATE/TIME	TOTAL DURATION (HRS)	MAX. CONCENTRATION	CAUSE/CORRECTIVE ACTION
a) Startup/Shutdown			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
b) Control equipment			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
c) Process problems			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
d) Other known causes			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
e) Unknown causes			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
f) Soot blowing			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
g) Fuel problems			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		

CONTINUOUS EMISSION MONITOR DOWNTIME REPORT

REPORTING QUARTER: First, 2019 AQD FILE #: #0203 (AI ID 447)

EMISSION UNIT(S): 16-B-7

POLLUTANT MONITORED: Fuel Gas Flow Rate

DATE/TIME	TOTAL DURATION (HRS)	CAUSE/CORRECTIVE ACTION
a) Monitor malfunction		
Total	<u>0.00</u>	
b) Non-monitor malfunction		
Total	<u>0.00</u>	
c) QA calibration		
Total	<u>0.00</u>	
d) Other known causes		
Total	<u>0.00</u>	
e) Unknown causes		
Total	<u>0.00</u>	

MINNESOTA POLLUTION CONTROL AGENCY

AQD FILE #: #0203 (AI ID 447)

EXCESS EMISSION AND CEM REPORTING FORM

POLLUTANT (circle one): SO₂ **NO_x** CO CO₂ **O₂** TRS H₂S HCL Opacity

Other: _____

REPORTING QUARTER: First, 2019

MONITOR Syscon/Uras 26 - NO_x

MODEL: Magnos 206 - O₂

FACILITY: St. Paul Park Refining Co. LLC

MFR: ABB

EMISSION SUBJECT ITEM: EQUI43

EMISSION LIMIT AND AVERAGE TIME: 0.20 lb/mmbtu - 30 Day rolling average

EMISSION UNIT(S): Boiler 8
 Boiler 16-B-8

EMISSION BASIS: NSPS Db

ASSOCIATED ITEMS: COMG27 (Boilers 7&8), EQUI215,
 EQUI217, STRU45

OPERATING HOURS OF EMISSION UNIT: 2160

A. EMISSION DATA SUMMARY		B. CEM Performance Summary	
DURATION OF EXCESS EMISSIONS (HRS)		1 DURATION OF CEM DOWNTIME DURING	
1	lb/mmbtu (30-Day)	SOURCE OPERATION (HRS)	
a) Startup/Shutdown	0.00	a) Monitor malfunction	Natural Gas 0.00
b) Control equipment	0.00	b) Non-monitor malfunction	0.00
c) Process problems	0.00	c) QA calibration	0.00
d) Other known causes	0.00	d) Other known causes	0.00
e) Unknown causes	0.00	e) Unknown causes	0.00
f) Soot blowing	0.00		
g) Fuel problems	0.00		
2 TOTAL DURATION (HRS)	0.00	2 TOTAL DURATION (HRS)	0.00
3 PERCENT OF TOTAL		3 PERCENT OF TOTAL	
EXCESS EMISSIONS	0.00%	CEM DOWNTIME	0.00%

FOR OPACITY, RECORD ALL TIMES IN MINUTES. FOR GASES, RECORD ALL TIMES IN HOURS.

% Total Excess Emissions = Total Duration of Excess Emissions / (Total Operating Time - CEM Downtime)

% Total CEM Downtime = CEM Downtime / Total Operating Time

NOTES: _____

If no exceedances: I certify that the required analyses were made, that I am familiar with the results, and that to the best of my knowledge there were no exceedances during the reporting period. I certify that I am familiar with the information in this report and that to the best of my knowledge the information is valid.

SUBMITTED BY: See certification page at front of report DATE: _____

CONTINUOUS EMISSION MONITOR EXCESS EMISSION REPORT

REPORTING QUARTER: First, 2019

AQD FILE #: #0203 (AI ID 447)

EMISSION UNIT(S): Boiler 16-B-8

POLLUTANT MONITORED: NOx (lbs/mmbtu)

DATE/TIME	TOTAL DURATION (HRS)	MAX. CONCENTRATION	CAUSE/CORRECTIVE ACTION
a) Startup/Shutdown			
1/1/2019			
4/1/2019			No excess emissions.
Total	0.00		
b) Control equipment			
1/1/2019			
4/1/2019			No excess emissions.
Total	0.00		
c) Process problems			
1/1/2019			
4/1/2019			No excess emissions.
Total	0.00		
d) Other known causes			
1/1/2019			
4/1/2019			No excess emissions.
Total	0.00		
e) Unknown causes			
1/1/2019			
4/1/2019			No excess emissions.
Total	0.00		
f) Soot blowing			
1/1/2019			
4/1/2019			No excess emissions.
Total	0.00		
g) Fuel problems			
1/1/2019			
4/1/2019			No excess emissions.
Total	0.00		

CONTINUOUS EMISSION MONITOR DOWNTIME REPORT

REPORTING QUARTER: First, 2019 AQD FILE #: #0203 (AI ID 447)

EMISSION UNIT(S): 16-B-8

POLLUTANT MONITORED: NOx

DATE/TIME	TOTAL DURATION (HRS)	CAUSE/CORRECTIVE ACTION
a) Monitor malfunction		
Total	<u>0.00</u>	
b) Non-monitor malfunction		
Total	<u>0.00</u>	
c) QA calibration		
Total	<u>0.00</u>	
d) Other known causes		
Total	<u>0.00</u>	
e) Unknown causes		
Total	<u>0.00</u>	

MINNESOTA POLLUTION CONTROL AGENCY

AQD FILE #: #0203 (AI ID 447)

EXCESS EMISSION AND CEM REPORTING FORM

POLLUTANT (circle one): SO₂ NO_x CO CO₂ O₂ TRS H₂S HCL Opacity
 Other: FLOW

REPORTING QUARTER: First, 2019

FACILITY: St. Paul Park Refining Co. LLC

EMISSION SUBJECT ITEM: EQUI43

EMISSION UNIT(S): Boiler 8
 Boiler 16-B-8

ASSOCIATED ITEMS: COMG7, COMG27, EQUI163, STRU44

MONITOR
 MODEL: Fuel Gas Flow Rate/FG H₂S CEM

MFR: _____

EMISSION LIMIT AND AVERAGE TIME:
 0.025 lb SO₂/mmbtu - 3 hour rolling average

EMISSION BASIS: SIP for SO₂ NAAQS

OPERATING HOURS OF EMISSION UNIT: 2160

A. EMISSION DATA SUMMARY		B. CEM Performance Summary	
DURATION OF EXCESS EMISSIONS (HRS)		1 DURATION OF CEM DOWNTIME DURING SOURCE OPERATION (HRS)	
1	lb/mmbtu		Natural Gas
a) Startup/Shutdown	0.00	a) Monitor malfunction	0.00
b) Control equipment	0.00	b) Non-monitor malfunction	0.00
c) Process problems	0.00	c) QA calibration	0.00
d) Other known causes	0.00	d) Other known causes	0.00
e) Unknown causes	0.00	e) Unknown causes	0.00
f) Soot blowing	0.00		
g) Fuel problems	0.00		
2 TOTAL DURATION (HRS)	0.00	2 TOTAL DURATION (HRS)	0.00
3 PERCENT OF TOTAL EXCESS EMISSIONS	0.00%	3 PERCENT OF TOTAL CEM DOWNTIME	0.00%

FOR OPACITY, RECORD ALL TIMES IN MINUTES. FOR GASES, RECORD ALL TIMES IN HOURS.

% Total Excess Emissions = Total Duration of Excess Emissions / (Total Operating Time - CEM Downtime)

% Total CEM Downtime = CEM Downtime / Total Operating Time

NOTES: _____

If no exceedances: I certify that the required analyses were made, that I am familiar with the results, and that to the best of my knowledge there were no exceedances during the reporting period. I certify that I am familiar with the information in this report and that to the best of my knowledge the information is valid.

SUBMITTED BY: See certification page at front of report DATE: _____

CONTINUOUS EMISSION MONITOR EXCESS EMISSION REPORT

REPORTING QUARTER: First, 2019 ACD FILE #: #0203 (AI ID 447)

EMISSION UNIT(S): Boiler 16-B-8

POLLUTANT MONITORED: SO2 lb/mmBtu

DATE/TIME	TOTAL DURATION (HRS)	MAX. CONCENTRATION	CAUSE/CORRECTIVE ACTION
a) Startup/Shutdown			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
b) Control equipment			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
c) Process problems			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
d) Other known causes			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
e) Unknown causes			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
f) Soot blowing			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
g) Fuel problems			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		

CONTINUOUS EMISSION MONITOR DOWNTIME REPORT

REPORTING QUARTER: First, 2019 AQD FILE #: #0203 (AI ID 447)

EMISSION UNIT(S): 16-B-8

POLLUTANT MONITORED: Fuel Gas Flow Rate

DATE/TIME	TOTAL DURATION (HRS)	CAUSE/CORRECTIVE ACTION
a) Monitor malfunction		
Total	<u>0.00</u>	
b) Non-monitor malfunction		
Total	<u>0.00</u>	
c) QA calibration		
Total	<u>0.00</u>	
d) Other known causes		
Total	<u>0.00</u>	
e) Unknown causes		
Total	<u>0.00</u>	

MINNESOTA POLLUTION CONTROL AGENCY

AQD FILE #: #0203 (AI ID 447)

EXCESS EMISSION AND CEM REPORTING FORM

POLLUTANT (circle one): SO₂ NO_x CO CO₂ O₂ TRS H₂S HCL Opacity

Other: _____

REPORTING QUARTER: First, 2019 MONITOR: Syscon/Uras 26 - CO

MODEL: Magnos 206 - O₂

FACILITY: MFR: ABB

St. Paul Park Refining Co. LLC

EMISSION SUBJECT ITEM: COMG27 EMISSION LIMIT AND AVERAGE TIME: 95 Tons Per Year - 12 month rolling sum

(for Boilers 7 & 8 combined as GP 032)

EMISSION UNIT(S): COMG27 EMISSION BASIS: TV Air Permit - Limit to avoid NSR

Boilers 16-B-7 and 16-B-8 40 CFR 52.21, Minn.R.7007.3000

ASSOCIATED ITEMS: EQUI42, EQUI43, EQUI213,

EQUI214, EQUI216, EQUI217, STRU44, STRU45

Boiler 7 Boiler 8

OPERATING HOURS OF EMISSION UNIT: 2160 2160

A. EMISSION DATA SUMMARY		B. CEM Performance Summary		
DURATION OF EXCESS EMISSIONS (HRS)		1 DURATION OF CEM DOWNTIME DURING SOURCE OPERATION (HRS)		
1	Ton/Year		Boiler 7	Boiler 8
a) Startup/Shutdown	0.00	a) Monitor malfunction	0.00	0.00
b) Control equipment	0.00	b) Non-monitor malfunction	0.00	0.00
c) Process problems	0.00	c) QA calibration	0.00	0.00
d) Other known causes	0.00	d) Other known causes	0.00	0.00
e) Unknown causes	0.00	e) Unknown causes	0.00	0.00
f) Soot blowing	0.00			
g) Fuel problems	0.00			
2 TOTAL DURATION (HRS)	0.00	2 TOTAL DURATION (HRS)	0.00	0.00
3 PERCENT OF TOTAL EXCESS EMISSIONS	0.00%	3 PERCENT OF TOTAL CEM DOWNTIME	0.00%	0.00%

FOR OPACITY, RECORD ALL TIMES IN MINUTES. FOR GASES, RECORD ALL TIMES IN HOURS.

% Total Excess Emissions = Total Duration of Excess Emissions / (Total Operating Time - CEM Downtime)

% Total CEM Downtime = CEM Downtime / Total Operating Time

NOTES: CEMS downtime for the GP 032 combined emission limit is reported if individually or for both

CEMS for Boiler 7 and Boiler 8 are down. These pages are applicable only for the

combined CO limit.

If no exceedances: I certify that the required analyses were made, that I am familiar with the results, and that to the best of my knowledge there were no exceedances during the reporting period. I certify that I am familiar with the information in this report and that to the best of my knowledge the information is valid.

SUBMITTED BY: See certification page at front of report DATE: _____

CONTINUOUS EMISSION MONITOR EXCESS EMISSION REPORT

REPORTING QUARTER: First, 2019 AOD FILE #: #0203 (AI ID 447)

EMISSION UNIT(S): GP 032 - 16-B-7 and 16-B-8

POLLUTANT MONITORED: CO Ton/Year

DATE/TIME	TOTAL DURATION (HRS)	MAX. CONCENTRATION	CAUSE/CORRECTIVE ACTION
a) Startup/Shutdown			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
b) Control equipment			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
c) Process problems			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
d) Other known causes			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
e) Unknown causes			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
f) Soot blowing			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
g) Fuel problems			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		

**CONTINUOUS EMISSION MONITOR
DOWNTIME REPORT**

REPORTING QUARTER: First, 2019 AQR FILE #: #0203 (AI ID 447)
EMISSION UNIT(S): 16-B-7
POLLUTANT MONITORED: CO

DATE/TIME	TOTAL DURATION (HRS)	CAUSE/CORRECTIVE ACTION
a) Monitor malfunction		
Total	<u>0.00</u>	
b) Non-monitor malfunction		
Total	<u>0.00</u>	
c) QA calibration		
Total	<u>0.00</u>	
d) Other known causes		
Total	<u>0.00</u>	
e) Unknown causes		
Total	<u>0.00</u>	

**CONTINUOUS EMISSION MONITOR
DOWNTIME REPORT**

REPORTING QUARTER: First, 2019 AQD FILE #: #0203 (AI ID 447)
EMISSION UNIT(S): 16-B-8
POLLUTANT MONITORED: CO

DATE/TIME	TOTAL DURATION (HRS)	CAUSE/CORRECTIVE ACTION
a) Monitor malfunction		
Total	<u>0.00</u>	
b) Non-monitor malfunction		
Total	<u>0.00</u>	
c) QA calibration		
Total	<u>0.00</u>	
d) Other known causes		
Total	<u>0.00</u>	
e) Unknown causes		
Total	<u>0.00</u>	

MINNESOTA POLLUTION CONTROL AGENCY

AQD FILE #: #0203 (AI ID 447)

EXCESS EMISSION AND CEM REPORTING FORM

POLLUTANT (circle one):	SO ₂	NO_x	CO	CO ₂	O₂	TRS	H ₂ S	HCL	Opacity						
	Other: _____														
REPORTING QUARTER:	First, 2019				MONITOR MODEL:	Syscon/Uras 26 - NO _x Magnos 206 - O ₂									
FACILITY:	St. Paul Park Refining Co. LLC				MFR:	ABB									
EMISSION SUBJECT ITEM:	COMG27				EMISSION LIMIT AND AVERAGE TIME:										
EMISSION UNIT(S):	COMG27 Boilers 16-B-7 and 16-B-8				38 Tons Per Year - 12 month rolling sum (for Boilers 7 & 8 combined as GP 032)										
ASSOCIATED ITEMS:	EQUI42, EQUI43, EQUI212, EQUI214, EQUI215, EQUI217, STRU44, STRU45				EMISSION BASIS: TV Air Permit - Limit to avoid NSR 40 CFR 52.21, Minn.R.7007.3000										
					<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 60%;"></td> <td style="width: 20%; text-align: center;">Boiler 7</td> <td style="width: 20%; text-align: center;">Boiler 8</td> </tr> <tr> <td>OPERATING HOURS OF EMISSION UNIT:</td> <td style="text-align: center;">2160</td> <td style="text-align: center;">2160</td> </tr> </table>						Boiler 7	Boiler 8	OPERATING HOURS OF EMISSION UNIT:	2160	2160
	Boiler 7	Boiler 8													
OPERATING HOURS OF EMISSION UNIT:	2160	2160													

A. EMISSION DATA SUMMARY			B. CEM Performance Summary		
DURATION OF EXCESS EMISSIONS (HRS)			1 DURATION OF CEM DOWNTIME DURING SOURCE OPERATION (HRS)		
1	ton/yr			Boiler 7	Boiler 8
a) Startup/Shutdown	0.00		a) Monitor malfunction	0.00	0.00
b) Control equipment	0.00		b) Non-monitor malfunction	0.00	0.00
c) Process problems	0.00		c) QA calibration	0.00	0.00
d) Other known causes	0.00		d) Other known causes	0.00	0.00
e) Unknown causes	0.00		e) Unknown causes	0.00	0.00
f) Soot blowing	0.00				
g) Fuel problems	0.00				
2 TOTAL DURATION (HRS)	0.00		2 TOTAL DURATION (HRS)	0.00	0.00
3 PERCENT OF TOTAL EXCESS EMISSIONS	0.00%		3 PERCENT OF TOTAL CEM DOWNTIME	0.00%	0.00%
FOR OPACITY, RECORD ALL TIMES IN MINUTES. FOR GASES, RECORD ALL TIMES IN HOURS.					

FOR OPACITY, RECORD ALL TIMES IN MINUTES. FOR GASES, RECORD ALL TIMES IN HOURS.

% Total Excess Emissions = $\frac{\text{Total Duration of Excess Emissions}}{\text{Total Operating Time} - \text{CEM Downtime}}$

% Total CEM Downtime = $\frac{\text{CEM Downtime}}{\text{Total Operating Time}}$

NOTES: CEMS downtime for the GP 032 combined emission limit is reported if individually or for both CEMS for Boiler 7 and Boiler 8 are down. These pages are applicable only for the combined NO_x limit.

If no exceedances: I certify that the required analyses were made, that I am familiar with the results, and that to the best of my knowledge there were no exceedances during the reporting period. I certify that I am familiar with the information in this report and that to the best of my knowledge the information is valid.

SUBMITTED BY: See certification page at front of report DATE: _____

CONTINUOUS EMISSION MONITOR EXCESS EMISSION REPORT

REPORTING QUARTER: First, 2019 AQD FILE #: #0203 (AI ID 447)

EMISSION UNIT(S): GP 032 - 16-B-7 and 16-B-8

POLLUTANT MONITORED: NOx (Tons/Year)

DATE/TIME	TOTAL DURATION (HRS)	MAX. CONCENTRATION	CAUSE/CORRECTIVE ACTION
a) Startup/Shutdown			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
b) Control equipment			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
c) Process problems			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
d) Other known causes			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
e) Unknown causes			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
f) Soot blowing			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
g) Fuel problems			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		

CONTINUOUS EMISSION MONITOR DOWNTIME REPORT

REPORTING QUARTER: First, 2019 AQD FILE #: #0203 (AI ID 447)

EMISSION UNIT(S): 16-B-7

POLLUTANT MONITORED: NOx

DATE/TIME	TOTAL DURATION (HRS)	CAUSE/CORRECTIVE ACTION
Note: NOx CEM downtime is the same downtime reported on the form for Boiler 7 for NOx ppm		
a) Monitor malfunction		
Total	<u>0.00</u>	See Boiler7 (NOx) page for details
b) Non-monitor malfunction		
Total	<u>0.00</u>	See Boiler7 (NOx) page for details
c) QA calibration		
Total	<u>0.00</u>	See Boiler7 (NOx) page for details
d) Other known causes		
Total	<u>0.00</u>	See Boiler7 (NOx) page for details
e) Unknown causes		
Total	<u>0.00</u>	See Boiler7 (NOx) page for details

CONTINUOUS EMISSION MONITOR DOWNTIME REPORT

REPORTING QUARTER: First, 2019 AQD FILE #: #0203 (AI ID 447)

EMISSION UNIT(S): 16-B-8

POLLUTANT MONITORED: NOx

DATE/TIME	TOTAL DURATION (HRS)	CAUSE/CORRECTIVE ACTION
Note: NOx CEM downtime is the same downtime reported on the form for Boiler 8 for NOx ppm		
a) Monitor malfunction		
Total	<u>0.00</u>	See Boiler8 (NOx) page for details
b) Non-monitor malfunction		
Total	<u>0.00</u>	See Boiler8 (NOx) page for details
c) QA calibration		
Total	<u>0.00</u>	See Boiler8 (NOx) page for details
d) Other known causes		
Total	<u>0.00</u>	See Boiler8 (NOx) page for details
e) Unknown causes		
Total	<u>0.00</u>	See Boiler8 (NOx) page for details

MINNESOTA POLLUTION CONTROL AGENCY

AQD FILE #: #0203 (AI ID 447)

EXCESS EMISSION AND CEM REPORTING FORM

POLLUTANT (circle one): SO₂ **NO_x** CO CO₂ **O₂** TRS H₂S HCL Opacity

Other: _____

REPORTING QUARTER: First, 2019

MONITOR: ABB Limas11 - NO_x

MODEL: Magnos 206 - O₂

FACILITY: St. Paul Park Refining Co. LLC

MFR: ABB

EMISSION SUBJECT ITEM: EQUI44

EMISSION LIMIT AND AVERAGE TIME: 40 ppmvd at 0% O₂

EMISSION UNIT(S): FCC Charge Heater (8-B-1)
 Unit Startup - 5/7/2012

EMISSION BASIS: NPS Ja

ASSOCIATED ITEMS: COMG7, EQUI163, MR070, MR071
 STRU34

NOTE: New MR numbers MR070 and MR071 have been selected for the new 8-B-1 heater.
These numbers are not yet entered into the Title V permit.

OPERATING HOURS OF EMISSION UNIT: 2160

A. EMISSION DATA SUMMARY		B. CEM Performance Summary	
DURATION OF EXCESS EMISSIONS (HRS)		1 DURATION OF CEM DOWNTIME DURING	
	ppmvd (30-Day)	SOURCE OPERATION (HRS)	
1			Fuel Gas
a) Startup/Shutdown	<u>0.00</u>	a) Monitor malfunction	<u>0.00</u>
b) Control equipment	<u>0.00</u>	b) Non-monitor malfunction	<u>0.00</u>
c) Process problems	<u>0.00</u>	c) QA calibration	<u>0.00</u>
d) Other known causes	<u>0.00</u>	d) Other known causes	<u>9.00</u>
e) Unknown causes	<u>0.00</u>	e) Unknown causes	<u>0.00</u>
f) Soot blowing	<u>0.00</u>		
g) Fuel problems	<u>0.00</u>		
2 TOTAL DURATION (HRS)	<u>0.00</u>	2 TOTAL DURATION (HRS)	<u>9.00</u>
3 PERCENT OF TOTAL		3 PERCENT OF TOTAL	
EXCESS EMISSIONS	<u>0.00%</u>	CEM DOWNTIME	<u>0.42%</u>

FOR OPACITY, RECORD ALL TIMES IN MINUTES. FOR GASES, RECORD ALL TIMES IN HOURS.

% Total Excess Emissions = Total Duration of Excess Emissions / (Total Operating Time - CEM Downtime)

% Total CEM Downtime = CEM Downtime / Total Operating Time

NOTES: _____

If no exceedances: I certify that the required analyses were made, that I am familiar with the results, and that to the best of my knowledge there were no exceedances during the reporting period. I certify that I am familiar with the information in this report and that to the best of my knowledge the information is valid.

SUBMITTED BY: See certification page at front of report DATE: _____

CONTINUOUS EMISSION MONITOR EXCESS EMISSION REPORT

REPORTING QUARTER: First, 2019 AQD FILE #: #0203 (AI ID 447)

EMISSION UNIT(S): EU 094

POLLUTANT MONITORED: NOx (ppmvd @ 0% O2)

DATE/TIME	TOTAL DURATION N (HRS)	MAX. CONCENTRATION	CAUSE/CORRECTIVE ACTION
a) Startup/Shutdown			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
b) Control equipment			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
c) Process problems			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
d) Other known causes			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
e) Unknown causes			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
f) Soot blowing			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
g) Fuel problems			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		

CONTINUOUS EMISSION MONITOR DOWNTIME REPORT

REPORTING QUARTER: First, 2019 AQD FILE #: #0203 (AI ID 447)

EMISSION UNIT(S): EU 094

POLLUTANT MONITORED: NOx

DATE/TIME	TOTAL DURATIO N (HRS)	CAUSE/CORRECTIVE ACTION
a) Monitor malfunction		
Total	<u>0.00</u>	
b) Non-monitor malfunction		
Total	<u>0.00</u>	
c) QA calibration		
Total	<u>0.00</u>	
d) Other known causes		
1/30/2019 16:00		
1/30/2019 19:00	3.00	Analyzer vent frozen
2/2/2019 9:00		
2/2/2019 11:00	2.00	Alarm on validation; tubing reconnected
3/13/2019 11:00		
3/13/2019 13:00	2.00	Lamp replaced
3/19/2019 14:00		
3/19/2019 15:00	1.00	Selectivity cell replaced
3/21/2019 10:00		
3/21/2019 11:00	1.00	Communications error
Total	<u>9.00</u>	
e) Unknown causes		
Total	<u>0.00</u>	

MINNESOTA POLLUTION CONTROL AGENCY

AQD FILE #: #0203 (AI ID 447)

EXCESS EMISSION AND CEM REPORTING FORM

POLLUTANT (circle one): SO₂ NO_x CO CO₂ O₂ TRS H₂S HCL Opacity
 Other: FLOW

REPORTING QUARTER: First, 2019

MONITOR

MODEL: MR074 (fuel gas); MR 075 (pilot gas)

MFR: Honeywell (fuel gas)

FACILITY: St. Paul Park Refining Co. LLC

EMISSION SUBJECT ITEM: EQUI44

EMISSION LIMIT AND AVERAGE TIME:

1.75 lb SO₂/mmbtu - 3 hour rolling average

EMISSION UNIT(S): FCC Charge Heater (8-B-1)
Unit Startup - 5/7/2012

EMISSION BASIS: SIP for SO₂ NAAQS

ASSOCIATED ITEMS: COMG7, EQUI163
STRU34

NOTE: New MR numbers MR074 and MR075 have been selected for the new 8-B-1 heater fuel gas
and pilot flow meters. These numbers are not yet entered into the Title V permit.

OPERATING HOURS OF EMISSION UNIT: 2160

A. EMISSION DATA SUMMARY		B. CEM Performance Summary	
DURATION OF EXCESS EMISSIONS (HRS)		1 DURATION OF CEM DOWNTIME DURING SOURCE OPERATION (HRS)	
1	lb/mmbtu		Fuel Gas
a) Startup/Shutdown	0.00	a) Monitor malfunction	0.00
b) Control equipment	0.00	b) Non-monitor malfunction	0.00
c) Process problems	0.00	c) QA calibration	0.00
d) Other known causes	0.00	d) Other known causes	0.00
e) Unknown causes	0.00	e) Unknown causes	0.00
f) Soot blowing	0.00		
g) Fuel problems	0.00		
2 TOTAL DURATION (HRS)	0.00	2 TOTAL DURATION (HRS)	0.00
3 PERCENT OF TOTAL EXCESS EMISSIONS	0.00%	3 PERCENT OF TOTAL CEM DOWNTIME	0.00%
FOR OPACITY, RECORD ALL TIMES IN MINUTES. FOR GASES, RECORD ALL TIMES IN HOURS.			

% Total Excess Emissions = $\frac{\text{Total Duration of Excess Emissions}}{\text{Total Operating Time} - \text{CEM Downtime}}$

% Total CEM Downtime = $\frac{\text{CEM Downtime}}{\text{Total Operating Time}}$

NOTES: _____

If no exceedances: I certify that the required analyses were made, that I am familiar with the results, and that to the best of my knowledge there were no exceedances during the reporting period. I certify that I am familiar with the information in this report and that to the best of my knowledge the information is valid.

SUBMITTED BY: See certification page at front of report DATE: _____

EXCESS EMISSION REPORT

REPORTING QUARTER: First, 2019

AQD FILE #: #0203 (AI ID 447)

EMISSION UNIT(S): EQUI44

POLLUTANT MONITORED: SO2 1b/mmbtu

DATE/TIME	TOTAL DURATION (HRS)	MAX. CONCENTRATION	CAUSE/CORRECTIVE ACTION
a) Startup/Shutdown			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
b) Control equipment			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
c) Process problems			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
d) Other known causes			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
e) Unknown causes			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
f) Soot blowing			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		
g) Fuel problems			
1/1/2019			
4/1/2019		No excess emissions.	
Total	0.00		

CONTINUOUS EMISSION MONITOR DOWNTIME REPORT

REPORTING QUARTER: First, 2019 AQD FILE #: #0203 (AI ID 447)

EMISSION UNIT(S): Heater 8-B-1 (EQUI44)

POLLUTANT MONITORED: Fuel Gas Flow Rate

DATE/TIME	TOTAL DURATION (HRS)	CAUSE/CORRECTIVE ACTION
a) Monitor malfunction		
Total	<u>0.00</u>	
b) Non-monitor malfunction		
Total	<u>0.00</u>	
c) QA calibration		
Total	<u>0.00</u>	
d) Other known causes		
Total	<u>0.00</u>	
e) Unknown causes		
Total	<u>0.00</u>	

EXCESS EMISSION AND CEM REPORTING FORM

POLLUTANT (circle one): SO₂ NO_x CO CO₂ O₂ TRS **H₂S** HCL Opacity
 Other: This report addresses Flare H₂S emissions.

REPORTING QUARTER: First, 2019

MONITOR

FACILITY:

MODEL: Maxum IISt. Paul Park Refining Co. LLCMFR: Siemens, Serial No. 001060EMISSION SUBJECT ITEM: TREA13

EMISSION LIMIT AND AVERAGE TIME:

162 ppm (3-hour rolling average)

EMISSION UNIT(S):

TREA13 Refinery flare stack

EMISSION BASIS:

40 CFR 63 NESHAP Subpart Ja

ASSOCIATED ITEMS:

FUGI73TOTAL OPERATING HOURS
OF EMISSION UNIT:2160

A. EMISSION DATA SUMMARY			B. CEM PERFORMANCE SUMMARY		
1 DURATION OF EXCESS EMISSIONS			1 DURATION OF CEM DOWNTIME		
EMISSIONS (HRS)	H ₂ S		DURING SOURCE OPERATION (HRS)		
a) Startup/Shutdown	0.00		a) Monitor malfunction	0.00	
b) Control equipment	0.00		b) Non-monitor malfunction	0.00	
c) Process problems	29.00		c) QA calibration	4.00	
d) Other known causes	0.00		d) Other known causes	39.00	
e) Unknown causes	0.00		e) Unknown causes	3.00	
f) Soot blowing	0.00				
g) Fuel problems	0.00				
2 TOTAL DURATION (HRS)	29		2 TOTAL DURATION (HRS)	46.00	
3 PERCENT OF TOTAL			3 PERCENT OF TOTAL		
EXCESS EMISSIONS	1.34%		CEM DOWNTIME	2.13%	

FOR OPACITY, RECORD ALL TIMES IN MINUTES. FOR GASES, RECORD ALL TIMES IN HOURS.

% Total Excess Emissions = Total Duration of SARA Reportable Emissions / (Total Operating Time - CEM Downtime)

% Total CEM Downtime = CEM Downtime / Total Operating Time

NOTES:

If no exceedances: I certify that the required analyses were made, that I am familiar with the results, and that to the best of my knowledge there were no exceedances during the reporting period. I certify that I am familiar with the information in this report and that to the best of my knowledge the information is valid.

SUBMITTED BY:

See certification page at front of report

DATE:

CONTINUOUS EMISSION MONITOR EXCESS EMISSION REPORT

REPORTING QUARTER: First, 2019 AQD FILE #: #0203 (AI ID 447)

EMISSION UNIT(S): TREA13 Refinery flare stack

POLLUTANT MONITORED: H2S

DATE/TIME	TOTAL DURATION (HRS)	MAX CONCENTRATION (ppm, 3-hour rolling avg.)	CAUSE/CORRECTIVE ACTION
a) Startup/Shutdown			
1/1/2019 0:00			
4/1/2019 0:00			
Total	0.00		
b) Control equipment			
1/1/2019			
4/1/2019			
Total	0.00		
c) Process problems			
1/26/19 16:00			
1/27/19 20:00	5.00	1167	Please see Incident A in the summary
1/29/19 23:00			
1/30/19 19:00	18.00	1065	Please see Incident A in the summary.
2/3/19 0600			
2/3/19 1100	6.00	2044	Please see Incident B in the summary.
Total	29.00		
d) Other known causes			
1/26/2019 0:00			
4/1/2019 0:00			
Total	0.00		
e) Unknown causes			
1/1/2019			
4/1/2019			
Total	0.00		
f) Soot blowing			
1/1/2019			
4/1/2019			
Total	0.00		
g) Fuel problems			
1/1/2019			
4/1/2019			
Total	0.00		

CONTINUOUS EMISSION MONITOR DOWNTIME REPORT

REPORTING QUARTER: First, 2019 AOD FILE #: #0203 (AI ID 447)

EMISSION UNIT(S): TREA13 Refinery flare stack

POLLUTANT MONITORED: H2S

DATE/TIME	TOTAL DURATION (HRS)	CAUSE/CORRECTIVE ACTION
c) QA calibration		
1/26/2019 7:00		
1/26/2019 9:00	2.00	QA Calibration
1/27/2019 7:00		
1/27/2019 8:00	1.00	QA Calibration
1/28/2019 7:00		
1/28/2019 8:00	1.00	QA Calibration
Total	4.00	
d) Other known causes		
1/9/2019 8:00		
1/10/2019 13:00	29.00	GC Plugged
1/23/2019 13:00		
1/23/2019 19:00	6.00	Down in sympathy with GC BTU Maintenance - pi data missing
2/17/2019 14:00		
2/17/2019 17:00	3.00	Sample probe plugging, probe filter and tubing replaced
2/19/2019 11:00		
2/19/2019 12:00	1.00	replace sample filter and tubing
Total	39.00	
e) Unknown causes		
1/12/2019 16:00		
1/12/2019 17:00	1.00	
1/14/2019 19:00		
1/14/2019 20:00	1.00	
2/4/2019 8:00		
2/4/2019 9:00	1.00	
Total	3.00	

Saint Paul Park Refinery Cal Gas Audit
Saint Paul Park, MN

Tag #:	31-AI-1A	Calender Quarter:	FIRST
Unit:	#2 SRU	Analyzer Span:	0 - 25%
Component:	OXYGEN (O ₂)	Serial Number:	C149549
Date:	Thursday, January 17, 2019	Technician:	BRYAN WINN
Start Time:	13:29	End Time:	14:15

Cylinder Gas Pressure Values

Cylinder Pressure (Start)	
Low Range	1030
High Range	900

Cylinder Pressure (End)	
Low Range	1000
High Range	900

Cylinder Gas Information		
	Low Calibration Gas	High Calibration Gas
Cylinder Certification Number:	CC37936	CC175979
Cylinder Certification Date:	7/5/2011	7/7/2011
Cylinder Expiration Date:	7/5/2019	7/7/2019
Type of Cylinder Certification:	EPA Protocol One	EPA Protocol One
Concentration (ppm or % Ca):	5.122	10.070

Calibration Gas Audit Results		
	Low Cal Gas	High Cal Gas
Range of Allowance (±15%) Low	4.35	8.56
Range of Allowance (±15%) High	5.89	11.58
Test Run #1	5.13	10.14
Test Run #2	5.13	10.14
Test Run #3	5.13	10.13
Average Result (Cm)	5.13	10.14
Accuracy (%)	0.14	0.66
Allowable Accuracy Error (%)	± 15%	± 15%
Test Results	PASS	PASS

TEST WAS SUCCESSFUL!

NOTE: Test Method and Procedures can be referenced from United States Environmental Protection Agency (US EPA) Code of Federal Regulations (CFR) Title 40 Part 60 Appendix F (5.2).

Saint Paul Park Refinery Cal Gas Audit
Saint Paul Park, MN

Tag #:	31-AI-1B	Calender Quarter:	FIRST
Unit:	#2 SRU	Analyzer Span:	0 - 500 PPM
Component:	SULFUR DIOXIDE (SO ₂)	Serial Number:	6981
Date:	Thursday, January 17, 2019	Technician:	BRYAN WINN
Start Time:	13:29	End Time:	14:15

Cylinder Gas Pressure Values

Cylinder Pressure (Start)	
Low Range	1030
High Range	900

Cylinder Pressure (End)	
Low Range	1000
High Range	900

Cylinder Gas Information		
	Low Calibration Gas	High Calibration Gas
Cylinder Certification Number:	CC37936	CC175979
Cylinder Certification Date:	7/5/2011	7/7/2011
Cylinder Expiration Date:	7/5/2019	7/7/2019
Type of Cylinder Certification:	EPA Protocol One	EPA Protocol One
Concentration (ppm or % Ca):	127.000	279.500

Calibration Gas Audit Results		
	Low Cal Gas	High Cal Gas
Range of Allowance (±15%) Low	107.95	237.58
Range of Allowance (±15%) High	146.05	321.43
Test Run #1	115.44	281.01
Test Run #2	128.59	283.40
Test Run #3	128.33	283.11
Average Result (Cm)	124.12	282.51
Accuracy (%)	-2.27	1.08
Allowable Accuracy Error (%)	± 15%	± 15%
Test Results	PASS	PASS

TEST WAS SUCCESSFUL!

NOTE: Test Method and Procedures can be referenced from United States Environmental Protection Agency (US EPA) Code of Federal Regulations (CFR) Title 40 Part 60 Appendix F (5.2).

Saint Paul Park Refinery Cal Gas Audit
Saint Paul Park, MN

Tag #:	2-AI-103	Calender Quarter:	FIRST
Unit:	#2 CRUDE	Analyzer Span:	0 - 10%
Component:	OXYGEN (O ₂)	Serial Number:	3.246580.2
Date:	Monday, January 28, 2019	Technician:	BRYAN WINN
Start Time:	13:20	End Time:	14:37

Cylinder Gas Pressure Values

Cylinder Pressure (Start)	
Low Range	1490
High Range	1400

Cylinder Pressure (End)	
Low Range	1480
High Range	1400

Cylinder Gas Information		
	Low Calibration Gas	High Calibration Gas
Cylinder Certification Number:	SG9169569BAL	CC174008
Cylinder Certification Date:	7/1/2013	2/17/2011
Cylinder Expiration Date:	7/1/2021	2/17/2019
Type of Cylinder Certification:	EPA Protocol One	EPA Protocol One
Concentration (ppm or % Ca):	5.002	9.998

Calibration Gas Audit Results		
	Low Cal Gas	High Cal Gas
Range of Allowance (±15%) Low	4.25	8.50
Range of Allowance (±15%) High	5.75	11.50
Test Run #1	4.84	9.82
Test Run #2	4.84	9.82
Test Run #3	4.85	9.83
Average Result (Cm)	4.84	9.82
Accuracy (%)	-3.17	-1.76
Allowable Accuracy Error (%)	± 15%	± 15%
Test Results	PASS	PASS

TEST WAS SUCCESSFUL!

NOTE: Test Method and Procedures can be referenced from United States Environmental Protection Agency (US EPA) Code of Federal Regulations (CFR) Title 40 Part 60 Appendix F (5.2).

Saint Paul Park Refinery Cal Gas Audit
Saint Paul Park, MN

Tag #:	2-AI-104	Calender Quarter:	FIRST
Unit:	#2 CRUDE	Analyzer Span:	0 - 100 PPM
Component:	OXIDES OF NITROGEN (NO _x)	Serial Number:	3.246579.2
Date:	Monday, January 28, 2019	Technician:	BRYAN WINN
Start Time:	13:20	End Time:	14:37

Cylinder Gas Pressure Values

Cylinder Pressure (Start)	
Low Range	1510
High Range	1770

Cylinder Pressure (End)	
Low Range	1500
High Range	1750

Cylinder Gas Information		
	Low Calibration Gas	High Calibration Gas
Cylinder Certification Number:	CC268503	CC18672
Cylinder Certification Date:	8/15/2016	5/2/2014
Cylinder Expiration Date:	8/15/2019	5/2/2022
Type of Cylinder Certification:	EPA Protocol One	EPA Protocol One
Concentration (ppm or % Ca):	25.0	57.3

Calibration Gas Audit Results		
	Low Cal Gas	High Cal Gas
Range of Allowance (±15%) Low	21.26	48.72
Range of Allowance (±15%) High	28.76	65.92
Test Run #1	24.83	55.21
Test Run #2	24.76	55.22
Test Run #3	24.91	55.47
Average Result (Cm)	24.83	55.30
Accuracy (%)	-0.71	-3.53
Allowable Accuracy Error (%)	± 15%	± 15%
Test Results	PASS	PASS

TEST WAS SUCCESSFUL!

NOTE: Test Method and Procedures can be referenced from United States Environmental Protection Agency (US EPA) Code of Federal Regulations (CFR) Title 40 Part 60 Appendix F (5.2).

Saint Paul Park Refinery Cal Gas Audit
Saint Paul Park, MN

Tag #:	32-AI-250	Calender Quarter:	FIRST
Unit:	HDH	Analyzer Span:	0 - 10%
Component:	OXYGEN (O ₂)	Serial Number:	3.346624.7
Date:	Monday, January 28, 2019	Technician:	BRYAN WINN
Start Time:	8:59	End Time:	10:15

Cylinder Gas Pressure Values

Cylinder Pressure (Start)	
Low Range	1600
High Range	1510

Cylinder Pressure (End)	
Low Range	1575
High Range	1500

Cylinder Gas Information		
	Low Calibration Gas	High Calibration Gas
Cylinder Certification Number:	CC327623	CC337712
Cylinder Certification Date:	2/4/2011	2/3/2011
Cylinder Expiration Date:	2/4/2019	2/3/2019
Type of Cylinder Certification:	EPA Protocol One	EPA Protocol One
Concentration (ppm or % Ca):	5.023	10.000

Calibration Gas Audit Results		
	Low Cal Gas	High Cal Gas
Range of Allowance (±15%) Low	4.27	8.50
Range of Allowance (±15%) High	5.78	11.50
Test Run #1	5.01	10.03
Test Run #2	5.03	10.03
Test Run #3	5.03	10.04
Average Result (Cm)	5.02	10.03
Accuracy (%)	0.02	0.34
Allowable Accuracy Error (%)	± 15%	± 15%
Test Results	PASS	PASS

TEST WAS SUCCESSFUL!

NOTE: Test Method and Procedures can be referenced from United States Environmental Protection Agency (US EPA) Code of Federal Regulations (CFR) Title 40 Part 60 Appendix F (5.2).

Saint Paul Park Refinery Cal Gas Audit
Saint Paul Park, MN

Tag #:	32-AI-251	Calender Quarter:	FIRST
Unit:	HDH	Analyzer Span:	0 - 100 PPM
Component:	OXIDES OF NITROGEN (NO _x)	Serial Number:	3.346654.7
Date:	Monday, January 28, 2019	Technician:	BRYAN WINN
Start Time:	8:59	End Time:	10:15

Cylinder Gas Pressure Values

Cylinder Pressure (Start)	
Low Range	1850
High Range	1400

Cylinder Pressure (End)	
Low Range	1795
High Range	1400

Cylinder Gas Information		
	Low Calibration Gas	High Calibration Gas
Cylinder Certification Number:	CC419354	CC400311
Cylinder Certification Date:	1/3/2017	7/10/2013
Cylinder Expiration Date:	1/3/2020	7/10/2021
Type of Cylinder Certification:	EPA Protocol One	EPA Protocol One
Concentration (ppm or % Ca):	24.79	57.71

Calibration Gas Audit Results		
	Low Cal Gas	High Cal Gas
Range of Allowance (±15%) Low	21.07	49.05
Range of Allowance (±15%) High	28.51	66.37
Test Run #1	25.42	57.88
Test Run #2	25.21	57.82
Test Run #3	25.34	57.80
Average Result (Cm)	25.32	57.83
Accuracy (%)	2.15	0.21
Allowable Accuracy Error (%)	± 15%	± 15%
Test Results	PASS	PASS

TEST WAS SUCCESSFUL!

NOTE: Test Method and Procedures can be referenced from United States Environmental Protection Agency (US EPA) Code of Federal Regulations (CFR) Title 40 Part 60 Appendix F (5.2).

Saint Paul Park Refinery Opacity Audit
Saint Paul Park, MN

Tag #:	8-AI-3A	Filter Certification Date:	November 18, 2018
Unit:	FCC	<i>Note: Cert. date must be no later than 6 months of test</i>	
Date:	Thursday, March 21, 2019	Instrument Serial No:	440-A-6000044023-B21/423
Technician:	BRYAN WINN	Monitor Pathlength	60.125"
Start Time:	13:55	Outlet Pathlength:	60.125"
End Time:	15:04	Pathlength Corrected:	No

Calibrated Neutral Density Filter Values

Actual Optical Density Filter Values	
Low Range	13.26
Mid Range	20.07
High Range	34.08

Adjusted Optical Density Filter Values	
Low Range	N/A
Mid Range	N/A
High Range	N/A

Opacity Audit Readings						
Run Number	Range	Calibration Filter (%Ca)	Instrument Reading (%Cm)	Arithmetic Values (Ca - Cm)		
				Low	Mid	High
1-1	Low	13.26	13.15	0.11		
1-2	Mid	20.07	19.83		0.24	
1-3	High	34.08	33.83			0.25
2-1	Low	13.26	13.35	0.09		
2-2	Mid	20.07	19.83		0.24	
2-3	High	34.08	33.75			0.33
3-1	Low	13.26	12.99	0.27		
3-2	Mid	20.07	19.83		0.24	
3-3	High	34.08	33.83			0.25
4-1	Low	13.26	12.84	0.42		
4-2	Mid	20.07	19.83		0.24	
4-3	High	34.08	33.83			0.25
5-1	Low	13.26	13.02	0.24		
5-2	Mid	20.07	19.83		0.24	
5-3	High	34.08	33.75			0.33

Opacity Audit Results			
	Low	Mid	High
Arithmetic Mean	0.19	0.24	0.28
Standard Deviation	0.19	0.00	0.04
Confidence Coefficient	0.24	0.00	0.05
Calibration Error (%)	0.43	0.24	0.34
Allowable Calibration Error (%)	≤ 3%	≤ 3%	≤ 3%
Test Results	PASS	PASS	PASS

TEST WAS SUCCESSFUL!

NOTE: Test Method and Procedures can be referenced from Saint Paul Park Refining Company (SPPRC) Title V Permit and QA/QC Program per Minnesota State Rule 7017 Subpart (1).



Opacity Certification Services, LLC

A Proud Veteran-Owned Business

8600 Harbor Drive
Raleigh, North Carolina 27615
Phone 919.215.9384
Fax 919.846.6041
Web: www.opacitycert.com

Results of NIST-Traceable Opacity Filter (Audit Attenuators) Certification

Customer: **St. Paul Park Refining Co., LLC**

Date of Certification: November 18, 2018	Document No. 111818-03
Date of Expiration: November 17, 2019	

Filters (Attenuators) are certified in accordance with 40 CFR Part 60, Subpart B, "Performance Specification 1", as well as the most current ASTM D6216 standard and Opacity Procedure 3. Laboratory spectrophotometer is calibrated daily by use of NIST SRM2031b standard reference materials.

Spectrophotometer

Spectrophotometer: Varian (HP) Cary 50 Conc	Serial Number: EL06023153	
Scanning Range: 380-780nm	Data Interval: 10nm	Spectral Bandpass: 1.5nm
Maximum Accuracy: ± 0.250 Absolute Opacity	Laboratory Temperature: 72° F (± 3°)/22° C (± 1°)	

NIST Standard Reference Material (SRM)

SRM Type: NIST 2031b series	Serial Number: Blank; 709-10; 709-30; 709-90
SRM Date of Certification: February 22, 2017	SRM Date of Expiration: February 28, 2019

Opacity Monitor

Opacity Monitor Make/Model:	Thermo Environmental 440 series		
Monitor Light Source:	Incandescent	Straight stack correction factor:	1.000
Angle of Incidence:	10 degrees	Correction factor (if given):	1.000

Opacity Filter Data		Set ID: #2			
Serial Number	Opacity	Transmittance	Optical Density	Previous Opacity	Δ Opacity
Q05A	13.26%	86.74%	0.0618	13.28%	-0.02
F43A	20.07%	79.93%	0.0973	20.11%	-0.04
F44A	34.08%	65.92%	0.1810	34.39%	-0.31

Signature of Spectrophotometer Operator

New and Existing Opacity and
PM Filter Testing

24-48 Hour Service
Standard

PS-1, Procedure 3, Appendix F &
ASTM D6216-12 Compliant

Filter Certification Results for : **St. Paul Park Refining Co, LLC**

Filter Serial No : **Q05A**

Date of Scan : 11/18/2018

Expiration Date : 11/17/2019

Monitor : Thermo Environmental 440

Angle of Incidence : 10 deg

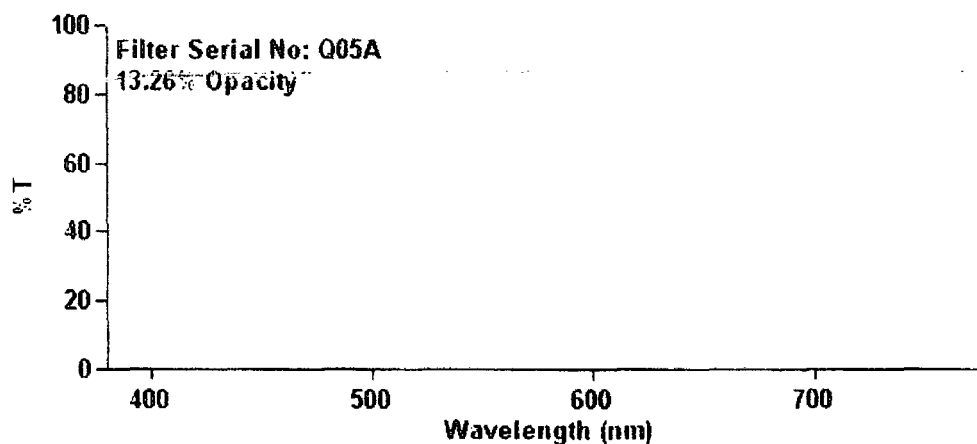
Opacity Value = **13.26%**

Transmittance = **86.74%**

Optical density = **0.0618**

Table 1-1: Opacity filter Scan Data at 10 nm Intervals

Lambda	Scan 1	Scan 2	Average	% Trans	Lambda	Scan 1	Scan 2	Average	% Trans
780	86.5	86.5	86.5	0.0	570	86.7	86.8	86.8	793508.
770	86.6	86.6	86.6	0.0	560	86.7	86.7	86.7	853452.
760	86.6	86.6	86.6	86.6	550	86.8	86.7	86.8	852934.
750	86.6	86.6	86.6	86.6	540	86.7	86.7	86.7	797360.
740	86.6	86.6	86.6	173.2	530	86.7	86.7	86.7	687737.
730	86.6	86.6	86.6	259.9	520	86.7	86.6	86.6	559876.
720	86.7	86.7	86.7	520.2	510	86.6	86.6	86.6	418478.
710	86.7	86.7	86.7	1213.9	500	86.5	86.5	86.5	294209.
700	86.7	86.7	86.7	2513.9	490	86.5	86.5	86.5	203938.
690	86.7	86.8	86.8	5379.9	480	86.4	86.4	86.4	139796.
680	86.6	86.6	86.6	11606.5	470	86.4	86.4	86.4	91396.0
670	86.7	86.7	86.7	22448.0	460	86.2	86.3	86.3	59858.3
660	86.7	86.6	86.7	43681.2	450	86.0	86.0	86.0	38101.8
650	86.7	86.7	86.7	76829.8	440	85.8	85.9	85.8	22488.5
640	86.7	86.7	86.7	125084.	430	85.8	85.8	85.8	10472.2
630	86.7	86.7	86.7	189912.	420	85.6	85.5	85.5	3165.2
620	86.7	86.6	86.6	273203.	410	85.6	85.5	85.5	769.9
610	86.8	86.8	86.8	362487.	400	85.3	85.3	85.3	170.5
600	86.8	86.8	86.8	461264.	390	84.9	84.9	84.9	0.0
590	86.7	86.8	86.8	574992.	380	84.2	84.1	84.2	0.0
580	86.8	86.8	86.8	693606.		0.0	0.0	0.0	0.0



Filter Certification Results for : **St. Paul Park Refining Co, LLC**

Filter Serial No : **F43A**

Date of Scan : 11/18/2018

Expiration Date : 11/18/2019

Monitor : Thermo Environmental 440

Angle of Incidence : 10 deg

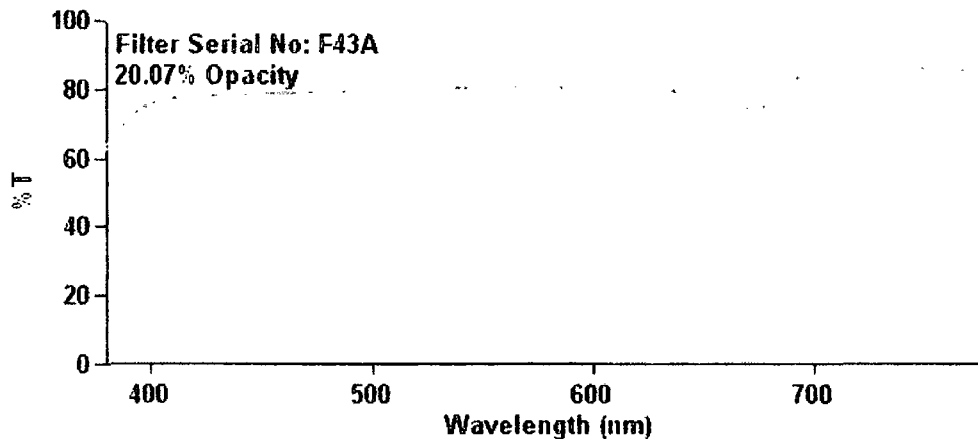
Opacity Value = **20.07%**

Transmittance = **79.93%**

Optical density = **0.0973**

Table 1-1: Opacity filter Scan Data at 10 nm Intervals

Lambda	Scan 1	Scan 2	Average	% Trans	Lambda	Scan 1	Scan 2	Average	% Trans
780	84.8	84.8	84.8	0.0	570	80.3	80.3	80.3	734531.
770	85.2	85.1	85.2	0.0	560	80.2	80.2	80.2	789223.
760	85.5	85.4	85.5	85.5	550	80.3	80.3	80.3	789217.
750	85.7	85.8	85.8	85.8	540	80.2	80.2	80.2	737420.
740	86.0	86.0	86.0	172.0	530	80.0	79.9	79.9	634292.
730	86.2	86.2	86.2	258.6	520	80.0	80.0	80.0	516894.
720	86.4	86.4	86.4	518.1	510	79.9	79.9	79.9	386314.
710	86.2	86.2	86.2	1206.9	500	79.4	79.4	79.4	270044.
700	85.3	85.2	85.3	2473.0	490	79.2	79.1	79.1	186621.
690	81.4	81.5	81.5	5051.1	480	79.2	79.2	79.2	128097.
680	75.1	75.1	75.1	10058.6	470	79.0	79.0	79.0	83621.9
670	74.6	74.6	74.6	19317.1	460	78.7	78.8	78.7	54646.4
660	77.7	77.7	77.7	39180.4	450	78.5	78.4	78.4	34752.4
650	78.9	78.9	78.9	69890.1	440	78.1	78.1	78.1	20456.6
640	79.0	78.9	79.0	113966.	430	78.1	78.1	78.1	9526.1
630	79.3	79.3	79.3	173603.	420	77.6	77.6	77.6	2871.6
620	79.7	79.7	79.7	251383.	410	77.3	77.4	77.3	696.1
610	79.5	79.5	79.5	331999.	400	75.8	75.8	75.8	151.6
600	79.3	79.3	79.3	421581.	390	71.0	70.9	70.9	0.0
590	80.0	80.0	80.0	530425.	380	62.6	62.7	62.7	0.0
580	80.3	80.3	80.3	641530.		0.0	0.0	0.0	0.0



Filter Certification Results for : **St. Paul Park Refining Co, LLC**

Filter Serial No : **F44A**

Date of Scan : 11/18/2018

Opacity Value = **34.08%**

Expiration Date :

Monitor : Thermo Environmental 440

Transmittance = **65.92%**

Angle of Incidence : 10 deg

Optical density = **0.1810**

Table 1-1: Opacity filter Scan Data at 10 nm Intervals

Lambda	Scan 1	Scan 2	Average	% Trans	Lambda	Scan 1	Scan 2	Average	% Trans
780	66.8	66.8	66.8	0.0	570	66.3	66.4	66.3	606887.
770	66.8	66.8	66.8	0.0	560	66.2	66.1	66.1	650975.
760	66.9	66.8	66.9	66.9	550	66.0	66.0	66.0	648453.
750	66.9	66.9	66.9	66.9	540	65.7	65.8	65.8	604555.
740	66.9	67.0	66.9	133.9	530	65.4	65.4	65.4	519178.
730	67.0	67.0	67.0	200.9	520	65.1	65.1	65.1	420918.
720	67.0	67.0	67.0	402.2	510	64.8	64.8	64.8	313032.
710	67.0	67.1	67.0	938.6	500	64.4	64.4	64.4	219114.
700	67.1	67.0	67.1	1944.8	490	64.1	64.1	64.1	151121.
690	67.1	67.1	67.1	4160.7	480	63.6	63.7	63.6	102978.
680	67.0	67.0	67.0	8984.4	470	63.3	63.3	63.3	66937.8
670	67.1	67.1	67.1	17376.9	460	62.8	62.8	62.8	43560.8
660	67.1	67.1	67.1	33820.3	450	62.2	62.2	62.2	27568.5
650	67.1	67.1	67.1	59435.1	440	61.7	61.6	61.7	16157.5
640	67.0	67.0	67.0	96723.0	430	61.2	61.2	61.2	7470.2
630	67.0	67.0	67.0	146741.	420	60.6	60.6	60.6	2241.3
620	66.9	66.9	66.9	211003.	410	60.1	60.1	60.1	540.9
610	66.9	66.9	66.9	279361.	400	59.4	59.4	59.4	118.8
600	66.8	66.8	66.8	354939.	390	58.7	58.7	58.7	0.0
590	66.6	66.7	66.7	441710.	380	58.0	58.0	58.0	0.0
580	66.5	66.5	66.5	531644.		0.0	0.0	0.0	0.0

